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MARKETING & TRANSPORTATION Situation



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MARKET FACTS

Item	Unit or base period	1971		1972		
		Year	4th qtr.	Year	3rd qtr.	4th qtr.
Farm-Retail Price Spreads: <u>1/</u>						
Retail cost	Dol.	1250	1260	1311	1323	1331
Farm value	Dol.	479	486	521	534	534
Farm-retail spread	Dol.	771	774	790	789	796
Farmer's share of retail cost	Pct.	38	39	40	40	40
Retail Prices: <u>2/</u>						
All goods and services (CPI)	1967=100	121.3	122.7	125.3	125.8	126.9
All food	1967=100	118.4	119.4	123.5	124.5	125.4
Food at home	1967=100	116.4	117.2	121.6	122.6	123.4
Food away from home	1967=100	126.1	128.2	131.1	131.9	133.3
Wholesale Prices: <u>2/</u>						
Food <u>3/</u>	1967=100	115.5	116.6	121.8	123.5	124.6
Cotton products	1967=100	110.6	112.8	121.8	123.1	124.3
Woolen products	1967=100	93.4	92.1	99.4	101.2	107.5
Agricultural Prices:						
Prices received by farmers	1967=100	112	114	126	127	132
Prices paid by farmers, interest, taxes and wage rates	1967=100	120	121	127	127	130
Prices of Marketing Inputs:						
Containers and packaging materials	1967=100	113	114	117	118	118
Fuel, power, and light	1967=100	120	121	126	127	127
Services <u>4/</u>	1967=100	129	133	138	139	141
Hourly Earnings:						
Food marketing employees <u>5/</u>	Dol.	3.25	3.30	3.45	3.45	3.52
Employees, private nonagricultural sector <u>2/</u>	Dol.	3.43	3.49	3.64	3.67	3.73
Farmers' Marketings and Income:						
Physical volume of farm marketings	1967=100	111	151	110	110	149
Cash receipts from farm marketings <u>6/</u>	Bil. dol.	53.1	54.9	58.5	58.1	62.5
Farmers' realized net income <u>6/</u>	Bil. dol.	16.1	16.9	19.2	18.8	21.2
Industrial Production: <u>7/</u>						
Food manufacturers	1967=100	114.9	115.8	118.4	118.9	118.8
Textile mill products	1967=100	108.6	111.0	---	115.0	---
Apparel products	1967=100	97.8	100.2	---	103.7	---
Tobacco products	1967=100	97.7	96.8	---	102.7	---
Retail Sales: <u>8/</u>						
Food stores	Mil. dol.	89,239	22,388	---	24,000	---
Eating and drinking places	Mil. dol.	31,131	8,055	---	8,445	---
Apparel stores	Mil. dol.	20,804	5,248	---	5,450	---
Consumers' Per Capita Income and Expenditures: <u>9/</u>						
Disposable personal income	Dol.	3,596	3,650	3,808	3,820	3,954
Expenditures for goods and services ...	Dol.	3,212	3,275	3,454	3,484	3,562
Expenditures for food	Dol.	567	570	597	599	612
Expenditures for food as percentage of disposable income	Pct.	15.8	15.6	15.7	15.7	15.5

1/ For a market basket of farm foods. 2/ Dept. of Labor. 3/ Processed foods, eggs, and fresh and dried fruits and vegetables. 4/ Includes such items as rent, property insurance and maintenance, and telephone. 5/ Average hourly earnings of production workers in food processing, and nonsupervisory workers in wholesale and retail food trades, calculated from Dept. of Labor data. 6/ Quarterly data seasonally adjusted at annual rates. 7/ Seasonally adjusted, Board of Governors of Federal Reserve System. 8/ Quarterly data seasonally adjusted, Dept. of Commerce. 9/ Seasonally adjusted annual rates, calculated from Dept. of Commerce data. Percentages have been calculated from total income and expenditure data.

MARKETING AND TRANSPORTATION SITUATION

CONTENTS

	<i>Page</i>
Farm Food Market Basket Statistics	4
Organization and Control of the Food System . . .	14
Trading in Onion Futures: Effects on Cash Prices .	20
Optimum Flows for Wheat, Feed Grain and Soybeans in FY 1973	23

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SUMMARY

Retail prices for foods from U.S. farms may rise around 6 percent in 1973 due to higher farm prices and increased costs of marketing. Much of the rise is expected in the first half of the year. The rate of increase should decline in the latter part of the year when farm prices are expected to ease.

Returns to farmers, particularly for meat animals, poultry, eggs, and possibly fresh fruits and vegetables, likely will continue at high levels during the first half of 1973. Rising wage rates for employees of food marketing firms and increased costs of other marketing inputs in 1973 will contribute to wider marketing margins. Marketing margins, which have lagged behind increases in both farm and retail prices since economic controls were initiated, probably will increase more than they did last year.

The retail cost of a market basket of farm-originated foods increased to an annual rate of \$1,331 in the fourth quarter of 1972—up 0.5 percent from the previous quarter. After remaining fairly stable since August, retail costs rose sharply in both November and December. For the quarter, the retail cost averaged 5.6 percent above a year earlier. Sharp price increases for beef, pork, eggs, and fresh fruits and vegetables contributed most to the rise.

Gross returns to farmers (farm value of quantities equivalent to retail units) for foods in the market basket averaged \$534 in the fourth quarter of 1972, about the same as in the third quarter, but up 10 percent from the fourth quarter of 1971. Farm values were up sharply from a year earlier for most items, particularly for beef cattle, hogs, poultry, eggs, wheat, and fresh fruits.

Marketing margins, as measured by the spread between the retail cost and farm value of the market basket, averaged \$797 in the fourth quarter. This was 0.9 percent wider than in the previous quarter and 2.9 percent wider than a year earlier. The spread, which is the gross margin received by marketing firms for assembling, processing, transporting, and distributing the products of the market basket, widened sharply from 1971 levels for meats, fresh

fruits and vegetables, and fats and oils products. However, spreads for dairy, poultry, eggs, and bakery and cereal products narrowed.

Year-to-year changes in market basket totals for foods from U.S. farms in 1972 included:

- *Higher retail costs, by 4.8 percent or \$60
- *Higher farm value, by 8.7 percent or \$42
- *Wider marketing spreads, by 2.4 percent or \$18
- *Larger farmer's share of the retail food dollar, up 2 cents to 40 cents.

FARM-FOOD MARKET BASKET STATISTICS

Fourth Quarter 1972

Retail Costs: Retail costs of the market basket of foods from U.S. farms rose sharply in both November and December after holding relatively stable from August through October (table 1).¹ As a result, the retail cost of the market basket averaged 0.5 percent higher in the fourth quarter of 1972 than the previous quarter. Food costs rose in each quarter, with the largest increases in the first and third quarters.

On a dollar basis, the retail cost of a market basket of farm-originated foods averaged \$1,331 (annual rate) in the fourth quarter, up \$7 (or 0.5 percent) from the previous quarter (table 2). Sharply higher prices for eggs and moderately higher prices for most other market basket foods contributed to the increase. Prices for fresh fruits and poultry decreased.

Compared with the same quarter a year earlier, the retail cost of domestically produced foods averaged 5.6 percent higher in the fourth quarter of 1972. All product groups except fats and oils products contributed to the increase. The largest increases were for meat products and fresh fruits, 12 percent; eggs about 11 percent; and fresh vegetables, 7 percent.

Farm Value: The farm value of a market basket of foods from U.S. farms averaged \$534 (annual rate) in the fourth quarter, about the same as in the previous quarter, although returns to farmers for some products changed significantly. Returns were up sharply for

eggs and cereal grains, and moderately for dairy and processed fruits and vegetables. Returns for most other products declined. Decreases were especially large for fresh fruits and vegetables, poultry, and fats and oils products. The decline in the farm value for fats and oils reflected a change in the price relationship between vegetable oils and meal, the joint products of oilseeds.

Returns to farmers for market basket foods in the fourth quarter averaged 10 percent above a year earlier. Returns for cereal grains were up 23 percent; eggs, 21 percent; fresh fruits, 16 percent; and meat animals and poultry, 14 percent. In contrast, the farm value of fats and oils products was 22 percent lower.

Farm-Retail Spread: The cost of marketing foods from U.S. farms increased in the fourth quarter of 1972 as prices at the retail level rose more than those at the farm level. The spread between the retail cost and farm value of the market basket averaged \$797, nearly 1 percent more than in the previous quarter. Spreads for most farm foods widened, particularly for fresh vegetables, poultry, eggs, fats and oils products, and meats. Spreads narrowed for fresh fruits and bakery and cereal products.

Marketing spreads in the fourth quarter averaged 2.9 percent wider than a year earlier. They accounted for about one-third of the rise at retail; higher returns to farmers accounted for the remaining two-thirds.

Farmer's Share: Farmers received an average of 40 cents of each dollar spent for a market basket of foods from U.S. farms in the fourth quarter, the same as in the previous quarter and 1 cent more than a year earlier.

Review of 1972

Retail Cost: Consumers spent \$1,311 for a market basket of domestically produced foods in 1972, up \$60 or 4.8 percent from 1971 (table 3). Increased consumer demand and a tight supply situation contributed to the largest increase since a 5.3 percent rise in 1969. Retail prices for farm foods had risen 4.2 percent in 1970 and 1.8 percent in 1971. During 1972, retail prices for farm foods rose sharply between January and February, declined slightly from March through May, and rose from May to August. After leveling off through October, they rose sharply in both November and December. Retail costs for U.S. farm foods in

¹The market basket contains the average quantities of domestic, farm-originated food products purchased annually per household in 1960 and 1961 by wage-earners and clerical worker families and single workers living alone. Its retail cost is calculated from retail prices published by the Bureau of Labor Statistics. The retail cost of the market basket foods is less than the cost of all foods bought per household, since it does not include cost of meals in eating places, imported foods, seafoods or other foods not of U.S. farm origin. The farm value is the gross return to farmers for the farm products equivalent to foods in the market basket minus allowances for by-products. It is based on prices at the first point of sale and may include marketing charges such as grading and packing for some commodities. The farm-retail spread-difference between the retail cost and farm value is an estimate of the total gross margin received by marketing firms for assembling, processing, transporting, and distributing the products in the market basket.

Table 1.--The market basket of farm food: Indexes of retail cost, farm value, and farm-retail spread, and farmer's share of the retail cost ^{1/}

Year and quarter	Retail cost	Farm value	Farm-retail spread	Farmer's share	Month	Retail cost	Farm value	Farm-retail spread	Farmer's share
	1967 = 100		Percent			1967 = 100		Percent	
Average:					1970				
1947-49 ...	82.9	106.9	67.7	50	January ...	113.8	119.9	110.0	41
1957-59 ...	91.5	94.8	89.5	40	February ..	114.1	121.5	109.5	41
					March	113.7	119.6	110.0	41
1962	93.3	94.1	92.8	39	April	113.6	115.1	112.6	39
1963	93.2	90.2	95.1	38	May	114.0	114.7	113.6	39
1964	93.4	90.0	95.5	37	June	114.1	115.3	113.3	39
1965	96.0	99.2	93.9	40	July	115.2	118.7	113.0	40
1966	101.1	106.3	97.8	41	August ...	114.9	112.6	116.3	38
1967	100.0	100.0	100.0	39	September :	113.9	113.2	114.4	39
1968	103.6	105.3	102.5	39	October ..	113.0	108.4	115.9	37
1969	109.1	114.9	105.4	41	November :	111.7	105.1	115.8	36
1970	113.7	114.1	113.4	39	December ..	112.2	104.7	116.9	36
1971	115.7	114.4	116.5	38					
1972 ^{2/}	121.3	124.4	119.3	40	1971				
					January ...	112.3	108.8	114.5	38
1969					February ..	113.3	114.1	112.8	39
I	105.5	109.5	103.0	40	March	114.0	114.1	114.0	39
II	108.2	116.3	103.1	42	April	115.1	113.3	116.2	38
III	111.3	117.0	107.7	41	May	115.5	113.8	116.6	38
IV	111.4	116.9	107.9	41	June	116.7	114.4	118.2	38
					July	117.7	116.7	118.4	38
1970					August ...	117.7	116.6	118.4	38
I	113.9	120.3	109.8	41	September :	116.4	113.3	118.3	38
II	113.9	115.0	113.2	39	October ..	115.8	114.2	116.8	38
III	114.7	114.8	114.6	39	November ..	116.1	116.4	115.9	39
IV	112.3	106.1	116.3	37	December ..	117.9	117.4	118.2	39
1971					1972 ^{2/}				
I	113.2	112.3	113.8	38	January ...	117.8	119.9	116.4	39
II	115.7	113.8	117.0	38	February ..	120.3	122.4	119.0	39
III	117.3	115.5	118.4	38	March	120.4	120.5	120.3	39
IV	116.7	116.0	117.0	39	April	119.9	119.8	120.0	39
					May	119.8	121.4	118.8	39
1972					June	120.6	124.1	118.4	40
I	119.5	120.9	118.6	39	July	122.2	127.7	118.7	41
II	120.1	121.8	119.0	39	August ...	122.6	126.3	120.3	40
III	122.5	127.4	119.3	40	September :	122.6	128.4	118.9	41
IV	123.1	127.5	120.4	40	October ..	122.5	125.0	120.9	40
					November ..	123.1	126.0	121.3	40
					December ..	123.8	131.4	119.0	41

^{1/} Retail cost of average quantities of farm-originated foods purchased annually per household in 1960-61 by urban wage-earner and clerical worker families and workers living alone, calculated from retail prices collected by the Bureau of Labor Statistics. Beginning November 1971, the retail cost is based on the index of domestically produced farm foods--a component of the Consumer Price Index published by the Bureau of Labor Statistics. Data for January 1968 to December 1972 has been revised. Indexes may be converted to dollar totals by multiplying by the following amounts for 1967: retail cost, \$1,080.64; farm value, \$419.07; and farm-retail spread, \$661.57. Additional historical data are published in Farm-Retail Spreads for Food Products, Misc. Pub. 741, January 1972.

^{2/} Preliminary.

Table 2 .--The market basket of farm foods by product group: Retail cost, farm value and farm-retail spread, fourth quarter 1972 with comparisons ^{1/}.

Item	IV 1972	Change from:			
		Previous quarter		Year ago	
		Dollars	Dollars	Percent	Dollars
Retail cost					
Market basket	1330.63	7.21	0.5	70.54	5.6
Meat	431.22	-.08	2/	46.47	12.1
Dairy	230.04	2.12	.9	3.14	1.4
Poultry	50.71	-.46	-.9	.99	2.0
Eggs	41.87	4.20	11.1	4.12	10.9
Bakery and cereal ...	192.93	1.06	.6	.81	.4
Fresh fruits	59.92	-3.84	-6.0	6.21	11.6
Fresh vegetables	90.59	2.22	2.5	5.88	6.9
Processed fruits and vegetables	129.33	1.50	1.2	2.41	1.9
Fats and oils	44.84	-.03	-.1	-.77	-1.7
Miscellaneous	59.18	.52	.9	1.28	2.2
Farm value					
Market basket	534.23	.08	2/	48.06	9.9
Meat	246.32	-4.61	-1.8	30.71	14.2
Dairy	109.99	1.40	1.3	3.64	3.4
Poultry	24.72	-1.25	-4.8	3.06	14.1
Eggs	25.80	3.66	16.5	4.44	20.8
Bakery and cereal ...	36.45	4.90	15.5	6.78	22.9
Fresh fruits	19.23	-.79	-3.9	2.64	15.9
Fresh vegetables	27.78	-2.66	-8.7	-1.12	-3.9
Processed fruits and vegetables	23.96	.23	1.0	.97	4.2
Fats and oils	11.02	-.98	-8.2	-3.17	-22.3
Miscellaneous	8.96	.18	2.1	.11	1.2
Farm-retail spread					
Market basket	796.40	7.13	.9	22.48	2.9
Meat	184.90	4.53	2.5	15.76	9.3
Dairy	120.05	.72	.6	-.50	-.4
Poultry	25.99	.79	3.1	-2.07	-7.4
Eggs	16.07	.54	3.5	-.32	-2.0
Bakery and cereal ...	156.48	-3.84	-2.4	-5.97	-3.7
Fresh fruits	40.69	-3.05	-7.0	3.57	9.6
Fresh vegetables	62.81	4.88	8.4	7.00	12.5
Processed fruits and vegetables	105.37	1.27	1.2	1.44	1.4
Fats and oils	33.82	.95	2.9	2.40	7.6
Miscellaneous	50.22	.34	.7	1.17	2.4

^{1/} The market basket contains the average quantities of farm-originated foods purchased annually per household in 1960-61. Retail cost is calculated from U.S. average retail prices collected by the Bureau of Labor Statistics. Farm value is payment to farmer for equivalent quantities of farm products minus imputed value of byproducts obtained in processing. Quarterly data are annual rates. Additional data are shown in tables at the back of this report. Data revised. Beginning November 1971, retail cost of the market is based on an index for domestically produced farm-foods--a component of the Consumer Price Index published by the Bureau of Labor Statistics.

^{2/} Less than 0.05 percent.

Table 3 .--The market basket of farm foods by product group: Retail cost, farm value and farm-retail spread, annual average 1971 and 1972 1/

Item	1972	1971	Change	
			1971 to 1972	
	Dollars	Dollars	Dollars	Percent
Retail cost <u>2/</u>				
Market basket	1310.82	1250.47	60.35	4.8
Meat	421.53	377.37	44.16	11.7
Dairy	229.02	225.49	3.53	1.6
Poultry	50.62	50.13	.49	1.0
Eggs	38.01	38.27	-.26	-.7
Bakery and cereal ...	192.54	192.67	-.13	-.1
Fresh fruits	58.61	55.68	2.93	5.3
Fresh vegetables	88.40	83.46	4.94	5.9
Processed fruits and vegetables	128.16	125.29	2.96	2.4
Fats and oils	45.25	44.68	.57	1.3
Miscellaneous	58.68	57.52	1.16	2.0
Farm value <u>3/</u>				
Market basket	521.37	479.49	41.88	8.7
Meat	242.89	207.12	35.77	17.3
Dairy	108.90	106.36	2.54	2.4
Poultry	24.70	23.79	.91	3.8
Eggs	21.66	21.89	-.23	-1.1
Bakery and cereal ...	32.04	30.26	1.78	5.9
Fresh fruits	17.79	16.68	1.11	6.7
Fresh vegetables	28.24	27.32	.92	3.4
Processed fruits and vegetables	23.80	23.03	.77	3.3
Fats and oils	12.50	14.07	-1.57	-11.2
Miscellaneous	8.85	8.97	-.12	-1.3
Farm-retail spread				
Market basket	789.45	770.98	18.47	2.4
Meat	178.64	170.25	8.39	4.9
Dairy	120.12	119.13	.99	.8
Poultry	25.92	26.34	-.42	-1.6
Eggs	16.35	16.38	-.03	-.2
Bakery and cereal ...	160.50	162.41	-1.91	-1.2
Fresh fruits	40.82	39.00	1.82	4.7
Fresh vegetables	60.16	56.14	4.02	7.2
Processed fruits and vegetables	104.36	102.17	2.19	2.1
Fats and oils	32.75	30.61	2.14	7.0
Miscellaneous	49.83	48.55	1.28	2.6

1/ Revised. Data for additional years are shown in tables at back of this report.

2/ Retail cost of average quantities of farm-originated foods purchased annually per household in 1960-61 by urban wage earner and clerical-worker families and workers living alone, calculated from retail prices and an index of domestic farm foods published by the Bureau of Labor Statistics.

3/ Payment to farmer for equivalent quantities of farm products minus imputed value of byproducts obtained in processing.

December 1972 averaged 5 percent above December 1971 (table 1).

Almost three-fourths of the 1972 rise in retail cost of the farm food market basket resulted from higher meat prices. Sharply higher prices for fruits and vegetables accounted for another 18 percent of the increase, with most other farm foods contributing the remainder.

Although food prices have risen rapidly in recent years, the rise has not been as great as for other goods and services purchased by consumers. The retail cost of domestically produced farm foods has risen 21 percent since 1967, compared with an increase of 26 percent for all other items in the Consumer Price Index.

Farm Value: Following 2 years of little annual change, the farm value of foods in the market basket increased 8.7 percent in 1972. Most of the rise resulted from a 17 percent increase in returns to farmers for meat animals. Farm values for fresh fruits were up 7 percent and bakery and cereal products were up 6 percent. The farm value for most other product groups rose more moderately. Despite the fourth quarter upturn, average annual returns to farmers for eggs showed a slight decrease. The farm value for fats and oils showed a substantial decline, despite sharply higher oilseed prices as a result of a decrease in the value of vegetable oil relative to oilseed meal.

The farm value for market basket foods varied about 10 percent during 1972. After rising sharply in February, returns to farmers decreased slightly in March and April, before rising to higher levels from May to September. Farm value fell sharply in October but rose to a record level in December as supplies of some food commodities tightened with rising consumer demand.

Returns to farmers for market basket foods have risen 24 percent since 1967. The 8.7 percentage increase in 1972 accounted for about one-third of the rise since 1967. The remainder reflected increases in 1968 and 1969.

Farm-Retail Spread: Widening marketing spreads contributed almost one-third of the rise in retail cost of market basket foods in 1972, considerably less than in most other recent years. The spread between the retail cost and the farm value increased 2.4 percent, compared with increases of 2.7 percent in 1971 and 7.6 percent in 1970.

The wage-price freeze from August to November of 1971 and Phase II of the Economic Stabilization Program apparently were successful in holding down the increase in farm-retail price spreads. In December 1972, marketing spreads were only slightly above the August 1971 level when the program began. In contrast, the farm value of the market basket during this period rose 16 percent and retail prices increased 7 percent.

Operating costs of food marketing firms increased

in 1972, continuing a long-term trend. Although limited by Phase II, earnings of employees in food marketing firms averaged an estimated \$3.45 per hour in 1972, up 6 percent from 1971. This was slightly less than the rate of increase in 1970 and 1971. Improvements in output per man-hour probably offset part of the rise in wages last year. Productivity increased strongly in the private sector of the economy last year as it usually does in periods of rapidly rising output. Prices of containers, packaging materials, and other intermediate goods and services purchased by marketing firms also averaged higher in 1972.

After-tax profits of food manufacturing corporations averaged 2.6 percent of sales in the first 3 quarters of 1972, up slightly from the same period of 1971, according to data compiled by the Federal Trade Commission and Securities and Exchange Commission. In contrast, after-tax profits of 15 leading retail food chains averaged 0.6 percent of sales, down from 0.9 percent a year earlier.

Marketing spreads have increased each year since 1950, except for 1960 and 1965. Annual increases in the 1960's were only about half those in the 1950's, in averaging 1.4 percent compared with 2.7 percent.

Farmer's Share: Increased returns to farmers accounted for more than two-thirds of the rise in the retail cost of market basket foods in 1972. As a result, the farmer's share of the dollar consumers spent for those foods in retail food stores increased, averaging 40 cents in 1972—2 cents more than in 1971. It was 41 cents in 1969, the recent high (table 1). In the 1960's, the farmer's share ranged from 37 to 41 cents. It averaged 47 cents 20 years ago.

Outlook for 1973

Retail food prices may rise around 6 percent in 1973 as marketing spreads widen and farm prices strengthen. Much of the rise is expected in the first half of the year. The rate of increase may decline in the second half when farm prices are expected to ease.

Returns to farms for food products are expected to average above fourth quarter levels during the first half of 1973 but drop in the second half, particularly in the fourth quarter as seasonally larger supplies of some products materialize. Meat animals, poultry, eggs, and possibly fresh fruits and vegetables may provide the upward push on farm prices in 1973.

Marketing spreads are expected to widen during the year as pressure intensifies from increased wages and higher prices for other inputs purchased by food marketing firms. Prices for many of these inputs are not controlled under Phase III of the economic program. Increases in farm-retail spreads, which have lagged behind increases at both the farm and retail levels since controls were initiated in August 1971, are expected to exceed 1972's increase of 2.4 percent.

Commodity Highlights

Beef: Retail prices for Choice beef averaged 113.2 cents per pound in the fourth quarter of 1972, up 6.6 cents from a year earlier (table 4). Although prices received by farmers for beef cattle increased sharply, the net farm value attributable to the meat portion of the animal was up only slightly because the allowance for byproducts (mainly hides) had increased substantially. Heavy natural steerhides in Chicago rose from \$16.12 per 100 pounds in the fourth quarter of 1971 to \$39.58 in the fourth quarter of 1972. The net farm value for beef averaged 70.1 cents in the fourth quarter of 1972, up 0.2 cent from a year earlier compared with an increase of 4.4 cents in the gross farm value, before the byproduct adjustment. As a result, the farm-retail spread for Choice beef widened 6.4 cents to 43.1 cents per retail pound. Practically all of the increase was in the carcass-retail spread which includes the retailer's margin. The farm-carcass spread, mainly the packer margin for the meat portion of the animal, was maintained. In 1972, commercial slaughter of beef was about 1 percent above 1971.

Retail prices, carcass prices, and farm value for Choice beef averaged slightly lower in the fourth quarter of 1972 than in the previous quarter. Retail prices for Choice beef averaged 113.2 cents per pound, down 2.1 cents from the previous quarter, and the farm value decrease 2.6 cents. As a result, the farm-retail spread averaged 0.5 cent wider than in the previous quarter.

The composite retail price for Choice beef averaged 114.6 cents per pound in December, up 2.3 cents from November. The net farm value increased 8.0 cents. Thus, the farm-retail spread was squeezed by 5.3 cents. The lag in response at retail usually happens when farm prices for beef cattle increase rapidly. This would portend some further increases in retail beef prices in the first quarter of this year.

Pork: Production of pork in 1972 dropped 10 percent from a year earlier. As a result, returns to farmers for hogs strengthened each quarter of 1972. Increases were greatest in the first and third quarters. The net farm value of the quantity of live animal equivalent to a pound of pork sold at retail averaged 51.7 cents in the fourth quarter, 16.4 cents higher than a year earlier. The retail price for pork cuts averaged 87.7 cents, up 15.8 cents. Thus, marketing margins for pork were squeezed slightly, narrowing 0.6 cent to 36 cents. The decrease was divided equally between the farm-wholesale spread, which includes the packer's margin and the wholesale-retail spread which includes the retailer's margin.

Fresh Fruit: As seasonally larger supplies of apples and citrus became available in the fourth quarter of 1972, the retail costs of fresh fruits in the market basket dropped 6 percent below the previous

quarter. Farm value decreased 4 percent while the marketing spread decreased 7 percent.

Despite the drop in prices in the fourth quarter of 1972, the retail cost averaged 12 percent higher than a year earlier, farm value was up 16 percent, and the farm-retail spread was 10 percent greater. From a longer term viewpoint, retail prices for the fresh fruit group have risen 30 percent since 1967, farm values 35 percent, and marketing spreads 28 percent.

Eggs: Reduced egg supplies in the fourth quarter of last year induced higher farm and retail prices for eggs. The retail price for Grade A large eggs averaged 57.9 cents per dozen in the fourth quarter, about 5.8 cents more than in the previous quarter (table 5). Increases at the farm level were less than at retail, thus the spread widened. Egg prices in the fourth quarter also were substantially higher than a year earlier, but the marketing spread narrowed slightly.

In December 1972, retail prices for Grade A large eggs averaged 62.3 cents per dozen, up 7 cents from November. Farm value increased 6 cents and farm-retail spreads 1 cent.

Fats and Oils: The farm value for vegetable oils used in margarine and other fats and oils products averaged 22 percent lower in the fourth quarter of 1972 than a year earlier, although the prices received by farmers for soybeans, the principal oilseed, were up 12 percent. The farm value attributed to oil decreased because the value of oil relative to meal declined sharply. The value of oilseed meal skyrocketed late in the quarter when bad weather hampered soybean harvesting operations.

The decrease in the farm value of fats and oils products was absorbed by marketing firms. The farm-retail spread for the group in the fourth quarter averaged 8 percent wider than a year earlier. In contrast, the retail cost decreased about 2 percent.

Bread: During the fourth quarter of 1972, prices of wheat and bread-type flour continued to rise, reflecting the effects of the large wheat sale to Russia and tight world wheat supplies. Prices received by farmers for bread-type wheat in 10 major producing States jumped to \$2.33 per bushel in December. This was \$1.02 a bushel above July when prices began to rise. The farm value of the wheat in a 1-pound loaf of bread increased from 2.6 cents in July to 3.7 cents in December (table 6). This was 0.3 cent higher than farm value in November-December 1947, and the highest level of farm wheat prices since World War II.

Flour prices also moved up dramatically in the second half of 1972. The f.o.b. mill price of bread-type flour increased from \$5.58 in July to \$7.44 per hundredweight in December, or the equivalent of 1.2 cents per 1-pound loaf of bread.

The retail price of a 1-pound loaf of bread averaged 24.7 cents in the fourth quarter, unchanged from the third quarter. Prices also averaged 24.7 cents for the year, 0.1 cent less than in 1971. The farm-retail spread

Table 4.--Beef, pork, and lamb: Retail price, carcass value, farm value, farm-retail spread, and farmer's share of retail price, annual 1969-72, quarterly 1971-72

Date	Retail price	Carcass	Gross	Byproduct	Net	Farm-retail spread			Farmer's
	per pound	value	farm	allowance	farm	Total	Carcass-	Farm-	share
	<u>1/</u>	<u>2/</u>	<u>3/</u>	<u>4/</u>	<u>5/</u>		retail	carcass	
	<u>Cents</u>				<u>Percent</u>				
Beef, Choice grade									
1969	96.2	68.7	66.9	4.7	62.2	34.0	27.5	6.5	65
1970	98.6	68.3	66.3	4.8	61.5	37.1	30.3	6.8	62
1971	104.3	75.6	72.4	4.5	67.9	36.4	28.7	7.7	65
1972	113.8	80.0	79.9	7.4	72.5	41.3	33.8	7.5	64
<u>1971</u>									
Jan.-Mar. ...	100.2	72.8	69.1	4.2	64.9	35.3	27.4	7.9	65
Apr.-June ...	104.8	76.3	72.8	4.6	68.2	36.6	28.5	8.1	65
July-Sept. ...	105.4	76.1	73.1	4.5	68.6	36.8	29.3	7.5	65
Oct.-Dec. ...	106.6	77.4	74.6	4.7	69.9	36.7	29.2	7.5	66
<u>1972</u>									
Jan.-Mar. ...	114.4	81.4	79.4	5.7	73.7	40.7	33.0	7.7	64
Apr.-June ...	112.3	81.2	80.6	7.0	73.6	38.7	31.1	7.6	66
July-Sept. ...	115.3	79.8	80.6	7.9	72.7	42.6	35.5	7.1	63
Oct.-Dec. ...	113.2	77.7	79.0	8.9	70.1	43.1	35.5	7.6	62
Pork									
1969	74.3	58.5	45.5	3.2	42.3	32.0	15.8	16.2	57
1970	78.0	58.7	42.9	3.4	39.5	38.5	19.3	19.2	51
1971	70.3	52.1	35.0	2.7	32.3	38.0	18.2	19.8	46
1972	83.2	65.2	51.4	3.5	47.9	35.3	18.0	17.3	54
<u>1971</u>									
Jan.-Mar. ...	69.2	50.2	33.1	2.6	30.5	38.7	19.0	19.7	44
Apr.-June ...	68.8	49.9	32.6	2.5	30.1	38.7	18.9	19.8	44
July-Sept. ...	71.3	52.8	36.4	2.8	33.6	37.7	18.5	19.2	47
Oct.-Dec. ...	71.9	55.4	38.0	2.7	35.3	36.6	16.5	20.1	49
<u>1972</u>									
Jan.-Mar. ...	79.0	61.3	47.1	3.3	43.8	35.2	17.7	17.5	55
Apr.-June ...	79.9	61.0	47.7	3.4	44.3	35.6	18.9	16.7	55
July-Sept. ...	86.1	67.1	55.3	3.7	51.6	34.5	19.0	15.5	60
Oct.-Dec. ...	87.7	71.5	55.4	3.7	51.7	36.0	16.2	19.8	59
Lamb, Choice grade									
1969	100.7	74.8	66.9	7.6	59.3	41.4	25.9	15.5	59
1970	105.5	73.8	65.1	6.4	58.7	46.8	31.7	15.1	56
1971	109.9	75.1	63.1	5.9	57.2	52.7	34.8	17.9	52
1972	118.3	79.7	70.5	7.5	63.0	55.3	38.6	16.7	53
<u>1971</u>									
Jan.-Mar. ...	106.5	69.0	59.2	6.0	53.2	53.3	37.5	15.8	50
Apr.-June ...	108.3	76.7	66.4	6.4	60.0	48.3	31.6	16.7	55
July-Sept. ...	111.8	79.3	66.1	5.6	60.5	51.3	32.5	18.8	54
Oct.-Dec. ...	112.2	75.2	62.5	5.7	56.8	55.4	37.0	18.4	51
<u>1972</u>									
Jan.-Mar. ...	114.4	77.7	67.1	6.5	60.6	53.8	36.7	17.1	53
Apr.-June ...	116.4	81.6	71.6	7.4	64.2	52.2	34.8	17.4	55
July-Sept. ...	120.5	82.8	73.9	7.8	66.1	54.4	37.7	16.7	55
Oct.-Dec. ...	122.1	76.5	69.4	8.3	61.1	61.0	45.6	15.4	50

1/ Estimated weighted average price of retail cuts. 2/ For quantity equivalent to 1 lb. of retail cuts:
Beef: 1.41 lb. of carcass beef; pork, 1.07 lb. of wholesale cuts; lamb, 1.18 lb. of carcass lamb.

3/ Payment to farmer for quantity of live animal equivalent to 1 lb. of retail cuts: Beef, 2.28 lb.; pork, 1.97 lb.; lamb, quantity varies by months from 2.42 lb. in May to 2.48 lb. in October. 4/ Portion of gross farm value attributed to edible and inedible byproducts. 5/ Gross farm value minus byproduct allowance.

Table 5 .--Changes in retail price, farm value, and farm-retail spread for selected market basket foods, fourth quarter 1972 with comparisons.

Item	Change from:			Change from:		
	IV	Previous	Year	IV	Previous	Year
	1972	quarter	ago	1972	quarter	ago
	Cents	Percent	Percent	Cents	Percent	Percent
Butter, pound			Cheese, American, $\frac{1}{2}$ pound			
Retail price	87.2	0.7	-0.3	55.1	1.1	3.6
Farm value	59.2	-1.2	1.7	24.5	1.2	7.5
Farm-retail spread	28.0	4.9	-4.4	30.6	1.0	.7
Milk, sold in stores, $\frac{1}{2}$ gallon			Chicken, frying, pound			
Retail price	59.8	0.5	1.0	41.5	-1.2	2.5
Farm value	30.5	1.3	2.7	20.0	-6.1	15.6
Farm-retail spread	29.3	-.3	-.7	21.5	3.9	-7.3
Eggs, large grade A, dozen			Corn flakes, 12 ounces			
Retail price	57.8	10.9	11.2	30.8	-.6	-4.3
Farm value	35.6	16.7	21.1	2.2	4.8	22.2
Farm-retail spread	22.2	2.8	-1.8	28.6	-1.0	-5.9
Apples, pound			Oranges, dozen			
Retail price	23.2	-18.3	13.2	96.0	-3.1	-3.8
Farm value	8.3	-4.6	18.6	20.3	-16.8	-15.4
Farm-retail spread	14.9	-24.4	10.4	75.7	1.3	-.1
Lettuce, head			Tomatoes, pound			
Retail price	37.7	20.1	-6.9	48.4	13.9	3.6
Farm value	12.7	22.1	-12.4	17.5	.6	-5.9
Farm-retail spread	25.0	19.0	-3.8	30.9	23.1	10.0
Orange juice, frozen, 6 oz. can			Margarine, pound			
Retail price	24.9	-0.4	0	32.9	-0.3	-0.9
Farm value	10.6	0	32.5	7.8	-13.3	-25.7
Farm-retail spread	14.3	-.7	-15.4	25.1	4.6	10.6
Potatoes, 10 pounds			Peas, frozen, 10 ounces			
Retail price	97.7	-5.7	19.9	22.8	1.8	2.7
Farm value	24.7	-26.0	33.5	3.6	0	0
Farm-retail spread	73.0	4.0	15.9	19.2	2.1	3.2

1/ Data for additional foods are shown in tables at back of this report.

declined 0.5 cent from the third to fourth quarter. For the year the farm-retail spread averaged 0.4 cent lower than in 1971, the only year-to-year decline in the last 25 years. All of the decline was in the retail spread which fell from 5.4 cents in 1971 to 4.6 cents in 1972. The baker-wholesaler's spread dropped by 1.1 cents between June and December, but averaged 13.8 cents for the year, 0.2 cent higher per loaf than in 1971.

The miller's flour spread averaged 0.6 cent for 1972,

the same as for 1971 despite an increase to 0.9 cent in December. The increase at year-end reflected greater increases in flour prices than increases in wheat prices and an unusually strong demand for millfeeds. Millfeed prices more than doubled. The high value of this byproduct held down the increased cost of wheat allocated to flour. This situation resulted in a greater increase in the miller's flour margin than would have occurred had millfeed and flour prices moved together.

Revised Series

Market basket statistics for U.S. farm foods have been revised to maintain comparability with a new index of retail prices for domestically produced farm food published by the Bureau of Labor Statistics. The new index is the farm-food component of the food-at-home segment of the Consumer Price Index.

Retail costs for market basket statistics for November 1971 forward were derived by applying the new BLS index to the retail cost (dollars) of the market basket for the base period, 1967. The old series was linked to the level of the new series at November 1971 by gradually adjusting the difference in levels back to January 1968. Retail costs for product groups were scaled to the new retail cost.

Relationships between farm values and retail costs in the old market basket were maintained and adapted to the new level of the market basket. The revised series is comparable with historical data prior to 1968 published for the market basket and its product groups in "Farm-Retail Spreads for Food Products," Mis. Pub. No. 741, Econ. Res. Serv., U.S. Dept. Agric., Jan. 1972.

Table 6.--White pan bread: Estimated retail and wholesale price of a 1-pound loaf; retailer's, wholesaler's, miller's and other spreads; farm value of ingredients; flour and wheat prices and related data, quarterly, monthly October-December, and annual, 1972

Item	Unit	I	II	III	Oct.	Nov.	Dec.	IV	Year
									1972
Retail price 1/.....	Cents per loaf:	24.5	24.7	24.7	24.5	24.7	25.0	24.7	24.7
Retail spread 2/.....	"	4.6	4.7	4.5	4.3	4.4	4.7	4.4	4.6
Wholesale price 3/.....	"	19.9	20.0	20.2	20.2	20.3	20.3	20.3	20.1
Baker-wholesale spread 4/.....	"	14.0	14.0	13.9	13.4	13.5	13.1	13.4	13.8
Cost to baker:									
All ingredients 5/.....	"	5.9	6.0	6.3	6.8	6.8	7.2	6.9	6.3
Flour 6/.....	"	3.8	3.9	4.2	4.5	4.5	4.9	4.6	4.1
Mill sales value of flour 6/.....	"	3.5	3.5	3.8	4.2	4.2	4.4	4.4	3.8
Miller's flour spread 7/.....	"	0.6	0.6	0.7	0.7	0.7	0.9	0.8	0.6
Cost of wheat to miller 8/.....	"	2.9	2.9	3.1	3.5	3.5	3.8	3.6	3.2
Other spreads 9/.....	"	1.8	1.8	1.8	1.9	1.9	1.7	1.8	1.9
Farm value:									
All ingredients 10/.....	"	3.5	3.6	3.8	4.2	4.2	4.6	4.3	3.8
Wheat 11/.....	"	2.6	2.6	2.8	3.2	3.2	3.7	3.4	2.8
Flour prices: 12/									
F.o.b. mill.....	Dol. per cwt.:	5.53	5.57	6.07	6.62	6.68	7.44	6.91	6.02
Delivered to bakers.....	"	6.03	6.06	6.57	7.19	7.10	7.81	7.37	6.51
Flour sales: 12/									
Sold in bags.....	Percent	16	21	13	18	23	12	18	17
Price differential for bags.....	Cents per cwt.:	15	15	17	17	17	18	17	16
Wheat prices:									
Farm delivery point 13/.....	Dol. per bu.:	1.32	1.33	1.51	1.85	1.90	2.33	2.03	1.55
Delivered to millers 14/.....	"	2.33	2.35	2.50	2.80	2.87	3.15	2.94	2.53

1/ Based on prices reported by Bureau of Labor Statistics. 2/ Spread between retail and wholesale prices. 3/ Estimated from BLS prices and trade data. 4/ Spread between wholesale price and cost to baker of all ingredients. 5/ Cost of flour plus shortening, nonfat dry milk, sugar and other minor nonfarm produced ingredients. 6/ Cost or sales value of flour (0.6329 lb.) used per pound of bread. 7/ Spread between mill sales value of flour and cost of wheat to miller. The data sources used to compute this spread have been improved by using prices of bread-type shown below. Thus, figures for the miller's spread are not comparable with previously published data. 8/ Cost of wheat (.01445 bu.) including marketing certificate, net of imputed cost chargeable to millfeed byproducts. 9/ Charges for transporting, handling, storing all ingredients, for processing ingredients other than flour and cost of nonfarm produced ingredients such as yeast, salt, and malt extract. This spread is a residual figure. 10/ Returns to farmers for wheat including an allowance for the marketing certificate, shortening, nonfat dry milk, and sugar used in a 1-pound loaf. 11/ Returns to farmers for wheat, including the certificate, less imputed value of mill-feed byproducts. 12/ Based on monthly sales and prices of bread-type flour reported by a sample of flour milling firms. 13/ Weighted average for hard winter and spring wheat in the 10 major wheat producing States. 14/ Includes allowance for marketing certificate.

✓ ORGANIZATION AND CONTROL OF THE FOOD SYSTEM¹

ABSTRACT

The food system is witnessing a general decrease in the number and an increase in the size of firms. Large national multi-product firms have taken an increasing share of the food market. They have developed formal methods, including production contracting and vertical intergration, to coordinate agricultural production with their market needs. As a result, a large part of the decision making function has shifted from the production sector to the processing and distribution sector. By 1985, large consumer-product merchandising firms will be a major factor in the food system. Food products will be but one of many items manufactured and marketed by these firms.

Key Words: Organization, control, structure, food system, coordination.

People have expressed much concern over the past several years about the dramatic changes in the organization and control of agriculture, and the future role of producers in the food system. This concern has sprung largely from the increasing influence of large food processing and distributing firms and other nonfarm interests on agricultural production, and also the continuing decline in the number of farms, especially small family-type farms. Fears have been voiced that the control of agricultural production and marketing is becoming concentrated in the hands of a few corporations, and that if present trends continue, 100,000 or fewer farms will account for 70 to 80 percent of total agricultural production within 2 or 3 decades.

Regardless of the concern, dramatic changes currently in the interrelationships and organizational structure of the food system will continue to occur in the foreseeable future. This article examines the nature and causes of these changes, impacts on producers of agricultural commodities, and possible future configuration of the food system.

¹Adapted from a speech prepared for the 1973 National Agricultural Outlook Conference, February 21, 1973, by William T. Manley and Donn A. Reimund.

Origins and Evidence of Structural Change in the Food System

The food industry can be viewed as 4 sequentially linked subsectors: farm inputs, farm production, food processing, and food distribution. All sectors have been undergoing a common structural change, namely a decrease in the number of firms accompanied by a corresponding increase in the size of firms. The number of plants manufacturing food products from farm produced raw materials declined 24 percent between 1958 and 1967 (the latest period for which data are available), while output per plant increased 82 percent. Correspondingly, the total number of retail grocery stores fell 16 percent, while the number of stores operated by large grocery chains (101 stores or more) increased. The market share of large grocery chains increased from 29 percent to 36 percent. There is every indication that these trends in establishment and firm numbers and sizes are still underway.

The decrease in firms has been almost entirely among small local enterprises. This can be attributed to a number of factors, including technological developments that have caused shifts in the competitive relationships among types and sizes of firms, urbanization, and growth of mass markets.

Large, multi-product firms have gained an increasing share of the market and usually have

national or regional operations. Their growth, along with the disappearance of local firms, has had a major influence on the production sector. National processing and distribution firms, for example, do not depend on any one production area for farm produced raw materials, but usually obtain supplies anywhere they can get the volume and quality needed to support nationwide marketing programs. Thus, their activities play a role in determining the location of agricultural production, with the result that producers for local markets, along with their input suppliers and marketing firms, have been placed at a competitive disadvantage.

Large processing and distribution firms have also been innovators in developing new techniques for coordinating agricultural production with their operations, often forcing small local firms and producers out of business. For example, a major factor in the decline of independent feed manufacturers has been the development of integrated livestock production-marketing systems that include the manufacture of feed as a part of the system.

Coordination among sectors is also transforming agricultural production into a dichotomous sector. Firms producing broilers, fed cattle, and some vegetable crops are increasingly using techniques of production and coordination that are very similar to industrial processes. Moreover, some enterprises such as hog production may follow the same pattern. In contrast, range cattle, grain, and most field crop producers continue to operate independently.

Much of the food system's structural change is in response to shifts in consumer demand. Rising consumer affluence and changing lifestyles have increased consumer demand for prepared foods. Rising real incomes have given consumers more discretionary purchasing power with which to buy more highly prepared foods while spending a smaller proportion of their income for food. The food industry has increasingly shifted from a commodity production orientation to a product merchandising orientation. This is reflected in mass merchandising, including the rapid growth in fast-food service and the proliferation of various fabricated and ready prepared food products.

Adjustments are particularly bewildering at the farm level because the change in the ways of doing business is requiring a change in the traditional role of producers. Agricultural producers, once the direct suppliers of many consumer food products, are being relegated to suppliers of raw materials.

The role of producers as primarily a source of raw materials departs from traditional concepts of farmers as the Nation's food producers and the processing and distribution sectors as only vehicles for moving farm output to the final consumer. Although the difference is subtle, it bears directly on

the question of the control of agriculture, and is the basis of much of the current concern about the future of the independent family farm. Traditionally, the basic decisions concerning the kinds and volumes of food products to be produced were made in the production sector, largely independent of other sectors of the food system.

When producers are viewed as suppliers of raw material to the processing sector, there is an implied shift in the basic decision-making processes to the processing sector. In other words, agricultural production is at the discretion of the processing sector.

There are two important implications to farmers in the role of suppliers of raw materials. One is the loss of independence that may result from contractual arrangements and vertical integration. Another is the possible change in bargaining position of individual producers in dealing with large processing and marketing firms, particularly if no alternative markets exist. The case of broiler producers has become the classic example of the problems that can befall independent farmers who become part of an integrated production-marketing system. The change in the status of many independent farmers to employees of the integrators is well documented. The basic problem, it appears, is not with contract production and integration, but from over-expansion of broiler production and the hazards of pursuing a highly specialized activity with no alternative uses for resources.

Integrated producers of other commodities have fared much better and have been able to develop arrangements that are generally satisfactory to all parties. The broiler case, however, points out the desirability of developing adequate safeguards to protect the interests of producers entering into contractual agreements with processors.

Despite the loss of independence and bargaining strength, there are certain advantages to producers from closer coordination with the processing sector. Chief among these is guaranteed outlets for their production. Other benefits, which may also help consumers, are the increased efficiencies that may result from closer coordination. Producers can concentrate on what they do best without worrying about finding a market for their output. Processors and distributors, assured of adequate supplies, can plan a more effective processing and marketing program.

For farmers willing to give up some independence, they can turn to group action (including either cooperatives or bargaining associations) to gain a voice in the coordination of production and marketing. For group action to be effective, however, certain conditions relating to volume, scale of operations, and market orientation must be met. Small local farmer co-ops may be unable to meet all

these requirements.

Cooperatives often are concerned with only one commodity or a closely related commodity group. Operations usually reflect the interests of members and tend to be commodity oriented. This places them at a disadvantage in competing with corporate marketing firms. In many instances the cooperative's major function is to move commodities into market channels, while corporate marketing firms develop and merchandise consumer products.

Many cooperatives are dealing with this problem. Some cooperatives, notably dairy groups, have merged into large regional organizations to enhance their competitive position in dealing with corporate processors and distributors. Other co-ops have integrated forward into the food system, often to the point of developing and merchandising consumer products. Where this occurs, the cooperative may take on many of the characteristics of corporate marketing firms, including product marketing and product diversification based on commodities other than those produced by members.

In another type of arrangement, co-ops have entered into joint ventures with corporate marketing firms, with the co-op maintaining responsibility for raw material supply and procurement, while the marketing firm performs product development and distribution. In this kind of relationship, producers gain access to product markets while maintaining greater control of their operations than by individually contracting with processors. Processors are assured of a raw material supply for an extended period of time, thereby gaining some of the advantages of vertical integration into production and avoiding some of the disadvantages.

Coordination of Production and Processing

A number of institutional arrangements are used to coordinate the activities of the 4 sectors of the food system. Some of these, especially those that involve changes in traditional relationships between agricultural producers and other stages of the food system, have become the subject of critical public scrutiny. Methods used for coordinating production and other activities are open market, contracting, and vertical integration (defined as ownership control of more than one stage in a vertical system). Principles underlying these methods apply to all types of legal business entities—proprietorships, corporations, and cooperatives—involved in the food system.

Agricultural commodities produced in large quantities under contractual arrangements or vertical integration generally possess a number of characteristics that distinguish them from commodities bought and sold on the open market. Commodities produced under formal arrangements

use both land and capital more intensively than the predominately open market commodities, tend to be more perishable, and are initially less homogeneous. For some commodities, technological innovations in either production or processing have provided the impetus for shifting from open market to contracting or vertical integration. Lack of product uniformity provides a strong incentive for formal arrangement and application of technology to achieve raw product uniformity. Moreover, for some commodities, production as well as processing activities can be reduced to routine operations requiring only technical supervision and little direct decision input from management.

The extent of formal coordination, including both contracting and vertical integration, of production and processing ranges from 100 percent for sugar beets and sugar cane to less than 1 percent for feed grains and hay and forage crops. In aggregate, less than one-fourth of U.S. agricultural output is produced under formal arrangements.

Formal coordination also is quite extensive in the production of milk, broilers and turkeys, and fruits and vegetables (table 7). About one-fourth of cattle feeding involves some type of formal coordination, primarily custom feeding, and some contracting is being tried in hog production. Crops that depend primarily on market coordination include wheat, feed grains, and soybeans. These continue to be produced by independent family farms.

Both corporations and producer cooperatives are engaged in formal coordination of agricultural production. For example, virtually all sugarbeets and about three-fourths of the vegetables for processing are produced for processing corporations under contract. However, producer bargaining associations represent grower interests in negotiating contract terms with processors.

Involvement of nonfarm interests in agricultural production is not limited to farm input and marketing firms, but also includes firms in the nonfood sectors of the economy. An analysis of the activities of nonfarm firms involved in the production of agricultural commodities with a high incidence of formal coordination revealed that of 262 firms identified, 21 percent were basically farm input suppliers, 48 percent were agricultural processing and distributing firms, but 31 percent were primarily engaged in non-agricultural manufacturing or service industries.

Two basic types of firms are included in the non-agricultural group—conglomerates with interests in the food industry, and firms for which agricultural production is incidental to the basic activity. The latter type includes firms producing agricultural commodities on land held for future development, and land-based natural resource companies (oil, gas, timber, etc.) engaging in agricultural production.

Table 7.--Methods of coordinating production of selected agricultural commodities, 1970 estimates

Commodity	Corporate					
	Vertical integration:	Contracts			Producer cooperatives <u>1/</u>	Open markets
		Individual producers	Producer bargaining associations			
	Percent of production					
Sugarbeets.....	2	--	98	--	--	
Sugarcane.....	60	23	--	17	--	
Fluid grade milk:	3	15	--	<u>1/80</u>	2	
Broilers.....	7	85	--	5	3	
Processing vegetables.....	10	69	9	7	5	
Citrus fruits...	30	14	3	38	15	
Turkeys.....	12	42	--	17	29	
Potatoes.....	25	24	13	8	30	
Deciduous fruits and nuts.....	20	--	8	30	42	
Eggs.....	20	20	--	15	45	
Fresh market vegetables.....	30	21	--	5	44	

1/ Includes producers bargaining associations.

Future Development of the Food System

Many things will affect the shape of the food system by 1985. Among these are environmental concerns, unionization of farm labor, and technological breakthroughs.

Large cattle feedlots and other types of confinement livestock enterprises are beginning to encounter waste disposal problems. A set of guidelines relating water quality standards to animal wastes is currently being developed. Failure to develop means of meeting these standards could conceivably slow the growth of industrialized confinement livestock production. However, waste disposal systems that should meet any imposed environmental standards are being built into large feedlots. The cost of installing waste disposal systems will probably be prohibitive for smaller, family-type enterprises. Thus, the impact of environmental restraints on the organization of confinement livestock production will likely accelerate the shift to an industrialized production system.

Contamination from agricultural chemicals is another problem that will influence the future control and organization of the food system. Regulations limiting pesticide and other chemical residues in food products provide a strong incentive for food processors to exert increased control over agricultural production.

Farm labor unionization likely will speed the exodus of small and marginal producers of labor-intensive commodities. Although the major efforts of farm labor organizers will be directed toward integrated corporate farms and large producers, smaller firms will be under pressure to match wage increases and improved terms of employment won by workers from their larger competitors. Thus, the unionization of farm labor will probably accelerate the industrialization process in labor-intensive commodities.

Technology has played a leading role in bringing about change, both within and outside the food system. Major innovations in the past have generally moved agriculture toward industrialization. This likely will continue even though there will be changes in technological emphasis to accommodate such issues as environmental enhancement.

By 1985 the transition of our food system will largely be accomplished. Internal control of the system will be dominated by market oriented firms with the most direct access to mass consumer markets. Agricultural production will be based more on market requirements, rather than having market choices being governed by what is produced.

The farm sector, however, will probably consist of two distinct parts. One will be very similar to the present farm structure of independent farmers producing and selling commodities on open markets.

This sector of agriculture will consist primarily of producers of major field crops, mainly cash grains and forage crops, and range livestock. Production units likely will become fewer and larger, but will remain independently operated and controlled.

There is a potential for a limited degree of more formalized coordination between production and marketing functions in these commodities by 1985. Consumption of beef, for instance, is projected to increase significantly by 1985. If adequate supplies of feeder cattle are not available, it is possible that large cattle feedlot operators may enter into forward delivery contracts with feeder cattle producers as a means of insuring adequate supplies for economical operation. Likewise, if expanded export commitments of grains create temporary shortages, grain marketing agencies may contract in advance for supplies.

The effect of such contracts might be only to accelerate production increases, which if realized, could remove the incentive for contracting. A situation of this type occurred in cotton in 1970 and 1971. Shortages of raw cotton resulted in significant contracting by ginner and cotton merchants for supplies, but contracting declined when supplies became more plentiful. It is possible, however, that future experiences of this nature could turn out otherwise. Forward selling could become the normal way of doing business.

The other sector of agriculture in 1985 will be very closely coordinated with the processing-distribution stages of the food system. Virtually all livestock feeding, dairying, and poultry production will be tightly controlled by industrialized production-marketing systems. This is already the case in broilers where over 95 percent of the production is either under contract or vertical integration. The dominant role of large cooperatives in marketing fluid grade milk may be expanded to all milk, and most production of dairy products may be done by cooperatives either under long-term contracts with corporate merchandisers or selling their own branded products. By 1985 cattle feeding will be predominantly large scale operations and closely coordinated with slaughter operations. Hog production, in which independent family farms currently account for about 98 percent of the output, likely will become more coordinated. This is contingent upon overcoming disease problems associated with large-scale hog production.

Nearly all processing vegetable crops and all major sugar crops are currently produced within an industrialized structure, so no major changes in organization and coordinating techniques are anticipated. Growth of industrialization in most other commodity subsectors will be largely a continuation of ongoing trends.

Diversification of food industry firms into nonfood

business activities, along with the entry of nonfood firms into food system activities, is rapidly erasing any distinction between food and nonfood companies. A class of broadly diversified consumer product organizations, both corporate and cooperative, will probably dominate the food industry by 1985. Very probably, a combination of incentives from vertical coordination including economies of scale, operational control, and market diversification will force a change in the operations

and organization of remaining specialized food industry firms, including co-ops. Food products will be one of many lines of consumer goods manufactured and distributed by such firms.

As a part of the food system, agriculture will become more integrated with other sectors of the general economy. Agricultural production will be carried out as a demand oriented business enterprise rather than being undertaken independently of marketing considerations and conditions.

2087
TRADING IN ONION FUTURES: EFFECT ON CASH PRICES //

25
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ABSTRACT

Futures trading in perishable commodities has frequently been cited as having undesirable effects on cash market prices. This article reports the results of an extensive study of the behavior of cash market prices for dry onions, a perishable commodity which was traded on the Chicago Mercantile Exchange from 1942 until a Congressional ban on trading became effective in 1959. The study detected no differences in cash onion price performance between periods before, during, and after trading.

Keywords: Onions, prices, price performance, futures trading.

People have argued over what the trading in commodity futures contracts does to cash market prices ever since formalized futures trading began. A common charge has been that speculation in commodity futures by individuals not involved in physical ownership of the product creates an artificial marketing environment with consequent cash price behavior not reflective of actual supply and demand conditions.

Producers of certain seasonally produced perishable commodities claim that seasonal marketing patterns for these commodities make cash price movements unusually vulnerable to speculative activity. Onions and potatoes are frequently cited as examples of crops for which "normal" pricing is disrupted by futures trading. The largest seasonal U.S. onion and potato crops are harvested in the fall and stored for sale during winter months. Physical deterioration gradually occurs over the storage season, and stocks are normally used up before substantial marketings of the spring crop begin. Periods of overlap between old and new crops are frequently characterized by marked and rapid price changes. Short or delayed new crops cause prices to soar in response to active competition for remaining storage stocks. Plummeting prices accompany early new crops as storers are forced to dump remaining holdings. It is often argued that such price fluctuations are amplified by the activities of futures market speculators who try to predict the date and

size of the new-crop harvest and to liquidate open positions.

Futures trading in onions began in 1942 on the Chicago Mercantile Exchange, and agitation to end trading, primarily from onion growers, began soon after. Several bills to prohibit trading were submitted to Congress beginning in the early 1950's, and in 1958, Congress passed Public Law 85-839 which banned onion futures trading on any exchange.¹

Trading in Maine potatoes on the New York Mercantile Exchange, which began in 1941, has also been opposed by growers but attempts to ban this trading have not been successful. The most recent attempt to ban trading of the contract was in the form of House of Representatives Bill 7287 to prohibit trading in Irish potatoes on all commodity exchanges. This bill was reported out of the House Committee on Agriculture on June 29, 1972, after four days of testimony before the Subcommittee on Domestic Marketing and Consumer Relations in January and March. A move to report the bill out of the House Rules Committee was subsequently defeated on September 26, 1972. However, following this action, the bill was brought to the floor of the House under the suspension of rule procedures which

¹Trading continued until November 1, 1959, pending resolution of a court order regarding the constitutionality of the ban.

requires a two-thirds vote for passage. On October 13, 1972, the House voted the bill down.

The ban on onion trading and attempts to get a bill passed in Congress to end trading in potatoes are in vivid contrast to recent commodity exchange expansions of trading in other perishable commodities, notably frozen pork bellies and live cattle and hogs. Thus, the issue of whether futures trading in perishables interferes with orderly marketing and upsets normal price movements becomes even more open to question and in need of further analysis. Evidence that trading in perishables has no significant impact on cash prices would be consistent with the expansion of traded commodities, based in large part on positive benefits to users of futures markets.

Study of Onion Prices

The history of trading in dry onions provides an experimental base for exploring the contention that futures trading in perishable commodities results in abnormal or undesirable cash price performance. We have onion price data for reasonably long periods before, during, and after the time of active futures trading in onions. This permits comparison of price behavior among the 3 periods.

A recently completed project sponsored by the Commodity Exchange Authority, USDA, and conducted by the University of Wisconsin and USDA's Economic Research Service, explored the price effects of futures trading in onions. The overall project consisted of 2 phases. The first involved a description and evaluation of the level and variability of onion prices over the period 1930-68. The second phase outlined and examined factors affecting onion prices over the same period.

Analysis of Price Performance

Phase I² dealt exclusively with the late-summer onion crop, comprising about three-fourths of total crop year production and the primary source of yellow globe variety which was the quoted variety in the onion futures contract. The overall period of analysis was the crop years 1930/31-1967/68. This span was divided into 3 subperiods consisting of 11 years prior to futures trading (1930/31-1940/41), 9 years of active trading (1949/50-1957/58), and 9 years following the ban on trading (1959/60-1967/68).

The study examined deflated f.o.b. shipping point prices in western Michigan and wholesale prices for Michigan onions sold in Chicago. Several measures of price performance were developed and compared

over the pre-trading, trading, and post-trading subperiods. Measures of price performance considered included (1) year-to-year variability in average weekly prices, (2) week-to-week variability within seasons, (3) variability in monthly price ranges, (4) variation over space, (5) deviation of observed coefficients of variation from those expected on theoretical grounds, and (6) random variability as measured by the variate difference method.

Based on exhaustive tests including these measures, the study concluded that a shift in price performance in the cash onion market apparently occurred between the pre-trading and trading subperiods. Whether this change was attributable to the existence of futures trading or the occurrence of World War II in the intervening years between the subperiods could not be determined. However, there was no evidence that price performance following the ban on trading differed from performance during the time of trading. In particular, the seasonal price pattern in the post-trading subperiod did not revert to that of the pre-trading subperiod, but was indistinguishable from the seasonal pattern of prices during trading. Furthermore, when 1931/32 (a crop year characterized by an extremely short late-summer crop and an inordinate seasonal price rise) was omitted from the analysis, it was not apparent that any significant shift in performance occurred over the entire 1930-68 period.

Analysis of Pricing Structure

While Phase I of the overall study of onion prices dealt with observed price performance, Phase II, conducted by Economic Research Service, considered the effect of market forces underlying observed prices. Economic models were developed to assess the influence of supply and demand variables on price, and to determine if and how their degree of influence differed during the period of futures trading.

Two separate analyses evolved in Phase II.³ The first considered year-to-year farm price variability for 3 seasonal onion crops; late summer, early spring, and intermediate, consisting of the combined late-spring and early-summer crops. A two-equation model for each crop was constructed consisting of an acreage response and price-quantity demand function. Acreage response was expressed as a function of lagged acreage and past and current prices. The price-quantity demand function related average farm price to production, competing onion crop size, consumer income, and trend.

²Conducted by A.C. Johnson, Jr., of the University of Wisconsin, and reported in "A Description of Price Performance in the Cash Onion Market," U.S. Dept. Agric. Tech. Bul. No. 1470, Washington, D.C., January 1973.

³The first analysis is reported in "Structure of Seasonal Supply and Demand in the Dry Onion Market," Econ. Res. Ser., U.S. Dept. Agric., MRR No. 985, Washington, D.C., Jan. 1973. A report covering the second analysis will be published at a later date.

Data were not available for considering the period prior to futures trading, but parameter estimates were obtained for the trading and post-trading period. Statistical tests were utilized to detect significant differences in the relative and absolute effect of explanatory variables between periods. For each seasonal crop, it was concluded that there was no difference in the impact of supply and demand forces on price between the periods during and following futures trading.

In the second study, a model was developed to analyze the process of intraseasonal pricing during the sales-from-storage period of the late-summer crop marketing season. The November-April season was divided into 4 intervals according to the type and quality of information available to market participants as the season progressed. Equations were constructed for each interval relating price to variables representing rate of current sales, the level of remaining storage stocks, the expected size and date of arrival of the new spring crop, and trend. The model was applied to weekly f.o.b. shipping point prices for Michigan onions. Separate estimates were made for periods preceding, during, and following futures trading in onions.

Using the estimated results, several methods of comparisons were employed to determine if the intraseasonal pricing process varied over the pre-trading, trading, and post-trading periods. While in limited cases, differences during parts of the season were suggested, such differences were not consistently present from test to test and there was no

compelling evidence to indicate that market forces influenced weekly cash onion prices differently in the 3 periods. Consequently, to the extent that the model represented the intraseasonal pricing mechanism, it was concluded that futures trading in onions had no discernible impact on the structure of intraseasonal pricing in the late-summer onion market.

Implications

The overall study provides evidence that neither onion price performance nor the underlying pricing structure of the onion market differed significantly during the period of onion futures trading from the periods preceding or following trading. This leads to the conclusion that futures trading had no perceptible impact on the workings of the cash onion market, and further, that onion futures trading cannot be judged as either detrimental or beneficial to cash onion prices merely because the product is more perishable than conventional types of products traded in futures.

Of course, the conclusions of this study directly apply only to onions. Comparable statistical analyses of the cash price effects of futures trading cannot be made in cases of perishable commodities currently being traded in futures. However, potatoes have much in common with onions, including similar cropping and marketing patterns, perishability, and demand elasticities. Hence, the results suggest that, as in the case of onions, cash potato prices may be similarly unaffected by trading in potato futures.

OPTIMUM FLOWS FOR WHEAT, FEED GRAINS, AND SOYBEANS IN fiscal year ²⁵ ~~1973~~ ²⁵ ~~1973~~ ²⁵ ~~1973~~

James L. Driscoll²⁵ and Mack N. Leath²⁵¹

ABSTRACT

The optimum flows from a linear programming multi-regional model of grains and soybeans to satisfy projected domestic and export demands during FY 1973 are described as well as optimum shipments from each port location by type of grain to satisfy projected export sales are presented. The analysis assumed that if a shipment was optimal, transportation equipment would be available to make the move. If the abnormally large export volumes are attained, about 87 percent of estimated handling capacity at ports will be utilized, and lake and gulf port elevators must be operated at full capacity.

Keywords: Economics, marketing, grains, oilseeds, transportation, spatial equilibrium. ✓

Heavy activity in grain and soybean exports during the current fiscal year is generally expected to produce severe strains in the domestic transportation system and in port handling capacity. Most of the concern is with the approximately 2,700 million bushels (73 million metric tons) of wheat, feed grains, and soybeans expected to move into export markets during the fiscal year. Accordingly, an analysis was made to: (1) determine the least-cost flow patterns of grains to satisfy export as well as domestic demands for grains; and (2) determine optimum ports of exit for grains given transportation costs and handling capacity at ports.

Domestic shipments are given little emphasis in this article since exports by coastal region are of primary concern. Consideration of domestic flows, however, are necessary since the simultaneous interaction of domestic and export demands determines the optimum source of grain for export. The domestic transportation system must accommodate both markets, further increasing the importance of considering the simultaneous nature of the relationships.

Research Methodology

A multi-commodity, multi-regional model was formulated and optimized with a linear programming algorithm. This gave an optimal set of flows based on estimates made in November 1972 from USDA data and other sources of available supplies, and required volumes of grain at various destinations. Port handling capacity was based on the uniform grain storage agreements between elevators and the Commodity Credit Corporation of handling capacity for a "normal workday."

Eight commodities and 40 regions were studied. The commodities were: hard winter and spring wheat, soft winter and white wheat, durum wheat, soybeans, corn, grain sorghum, barley, and oats. Regions included: (1) the 6 States of New England for one region, (2) New Jersey and Pennsylvania for another, (3) Delaware, Maryland, Virginia, and West Virginia for a third, (4) Other States as regions in themselves, and (5) Texas divided into North and South regions. Alaska, Hawaii, and Puerto Rico were not considered, although wheat was required at appropriate ports to satisfy milling demands in Hawaii and Puerto Rico.

No transportation capacity constraints were placed on any route included in the model, implicitly assuming that transportation equipment can be

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made available to move the required volumes. The lowest applicable freight rate among competing modes was used, although rail rates were restricted to single-car through or combination rates from initial origin to final destination. Transit rates were not incorporated. The freight rates, in general, were truck for short moves and rail for longer distances. Truck-barge combinations were used where the combination rate plus added handling cost was less than rail. The universe of potential movements cannot be incorporated economically in a model of this type; hence, readers must recognize that the results can only be an approximation of reality. Most available data are restricted to a Statewide basis, which necessarily restricts the model to a single origin and a single destination in each region for each grain.

Considerable judgement was involved in the development of the data, especially of the regional supplies. The research technique required that total supply approximate total demand. Otherwise, corn undoubtedly would have been substantially over-utilized and other feed grains under-utilized in satisfying animal feed demands. Stock adjustments were made in surplus regions on the basis of subjective evaluations of the adequacy of stocks in these regions. Similar judgements were required at other points since time did not permit development of forecasting techniques.

Optimum Domestic Shipment of Grain

In terms of total utilization, the model showed that domestic and export shipments accounted for about 74 and 26 percent, respectively, of total shipments. Intrastate shipments of grain represented the largest share of total domestic shipments (table 8)¹. Intrastate shipments included 2,758 million bushels of feed grains used on farms where grown as feed. Hence, only about 1,902 million bushels of the intrastate movements of feed grains will be handled by the commercial transportation system.

Major domestic movements of wheat, at the optimum, originated in only a few regions. North and South Dakota shipped across the entire upper portion of the United States east of these States and supplied regions as far east as New York. Nebraska and Kansas supplied the Southeastern United States, while Colorado supplied the Central Midwest. Regions in the Corn Belt generally shipped soft wheat to nearby regions, while the Western regions shipped into the Southwest.

Domestic shipments of feed grains represented approximately 3,600 million bushels, about 5 times

the volume of all wheat. The Northeastern and Mid-Atlantic States were supplied primarily by Ohio and Indiana. Illinois, Minnesota, Iowa, and Kansas primarily shipped feed grains into the Southeastern and Delta areas. North and South Dakota shipped to the Upper Lakes region (Michigan and Wisconsin), while Nebraska shipped to the Southeast, the Intermountain, and the Far West areas. The Western States shipped into the Intermountain and Far West areas. Significant volumes of grain thus moved long distances.

Interstate shipments of soybeans represent a relatively small share of total domestic shipments due to a concentration of crushing capacity in producing regions. Iowa originated the majority of interstate shipments with about equal volume shipped to the neighboring States of Illinois and Missouri.

Optimum Exports by Port Region

Optimum shipments to port regions were determined simultaneously with the domestic flows discussed above. A particular type of grain was not required to move through a particular port region; rather, minimum export requirements of each grain were specified at each coast based on previous export volumes, and maximum handling capacity constraints were specified at each port. Within this framework, the projected export quantities of each grain were allowed to move to the optimum port of exit and compete for port handling capacity.

Optimum exports by type of grain and port region are shown in Table 9. The proportion of total exports of all grains handled by each of the 4 coastal regions based on the model were as follows: Lake ports-18 percent, Atlantic ports-10 percent, Gulf ports-62 percent, and Pacific ports-11 percent. A major portion of the volumes exported through Lake and Atlantic ports was corn and soybeans. Although the volumes of corn and soybeans moving through Gulf ports were considerably larger than the combined totals of Lake and Atlantic ports, the most important commodity for Gulf ports was hard wheat. Exports from Pacific ports were primarily wheat, about equally divided between hard and soft wheat.

Hard Wheat

In the model, the Gulf ports handled 691 million bushels or 78.5 percent of the projected exports of 880 million bushels of hard wheat. Pacific ports handled almost 16 percent of the total while smaller quantities moved to Lake and Atlantic ports. Exports through the Lakes were drawn from Minnesota and Wisconsin while East Coast shipments originated in Illinois. Shipments to New Orleans originated in North Dakota and Nebraska, and Kansas, Oklahoma, Texas, ports. Colorado, Wyoming,

¹Intrastate and interstate denote intra-regional and inter-regional, respectively.

Nevada, Montana, Washington, and Oregon shipped 139 million bushels to Pacific ports.

Soft Wheat

All except 3 ports participated in the projected soft wheat exports of 202 million bushels. The Northwestern ports, represented by Portland in the model, exported 134 million bushels of western white wheat and accounted for two-thirds of total soft wheat exports. These shipments were supplied from Washington and Oregon. The California ports handled smaller quantities originating in Arizona, Nevada, and California. Lake ports drew shipments from Wisconsin and Ohio, while New York, Indiana, and South Carolina shipped to Atlantic ports. Numerous supply regions adjacent to the Mississippi River shipped soft wheat to the New Orleans area (all eastern Gulf ports.).

Durum Wheat

Durum wheat exports were distributed among the coastal regions because of minimum coastal requirements. All shipments originated in North Dakota except for 1 million bushels shipped to Superior from Minnesota and 2.4 million bushels shipped from South Dakota to Norfolk.

Soybeans

The most important port of exit for soybeans was New Orleans with over 63 percent (317 million bushels) of projected soybean exports. Atlantic and Lake ports handled 102 and 80 million bushels, respectively. Lake exports originated in Minnesota and Ohio. Shipments from Philadelphia originated in the East North Central region while Norfolk (including N. Charleston, S.C.) drew soybeans from nearby South Atlantic States. The New Orleans port region received soybean shipments from all South Central States except Tennessee and Texas. An additional 157 million bushels were barged from Illinois and Missouri.

Feed Grains

Corn, by far the most important feed grain exported, showed a projected total of 988 million bushels according to the model. Sorghum exports totaled about 120 million bushels. Exports of barley and oats were minor in comparisons.

Lake and Gulf ports have definite advantages in exporting corn because of the close proximity of Lake ports to major production regions and the availability of barge transportation from major production regions to New Orleans. These advantages are reflected in the volumes of corn exported through these coastal regions. Gulf ports exported 542 million bushels of corn, or 55 percent of

the total. Lake and Atlantic ports handled 316 and 130 million bushels, respectively. Lake exports of corn involved shipments from South Dakota to Superior, from Wisconsin and Minnesota to Chicago, and from Indiana and Michigan to Toledo. Indiana shipped 9.3 million bushels to Philadelphia, and Illinois shipped 120.7 million to Norfolk. Illinois also shipped 334.3 million bushels to New Orleans. New Orleans also drew supplies from Iowa, Missouri, and Kansas with shipments totaling 81.0, 4.8, and 37.4 million bushels, respectively. Texas ports handled over 70 million bushels of Iowa corn and drew smaller quantities from Texas origins.

Sorghum exports were confined to Gulf ports with the exception of 3 million bushels required on the West Coast, and that quantity was shipped from Kansas. The large quantities of sorghum exported from Texas ports were shipped from Kansas (38 million bushels) and Texas (75 million bushels). A small quantity was shipped via truck-barge from South Dakota to New Orleans.

Total export requirements for barley were satisfied with shipments from North Dakota. Only 3 States participated in the oat export market, and oats moved from Illinois to New Orleans, from South Texas to Houston, and from California to San Francisco.

Utilization of Port Capacity

If actual exports of the commodities included in this analysis reach the projected total of 2,764 million bushels (table 9) during fiscal year 1973, approximately 87 percent of estimated handling capacity at ports will be utilized. Handling capacity at the various port locations except Lake ports was estimated on the basis of actual loadings from July 1 through November 30, 1972, plus 120 days of loading at rated capacity. Since the Lakes are closed from mid-December to mid-April, only 44 days were planned for Lake ports. This assumes that port elevators will be able to load out at capacity 4 days per week on the average during the last 7 months of the fiscal year, which provides for such allowances as bad weather, late ship arrivals, and breakdowns.

The assigned capacities at Lake and Gulf ports were fully utilized. Shipments from the Atlantic and Pacific ports utilized 56 and 58 percent of total handling capacity, respectively, leaving over 200 million bushels of unused capacity at each coast. The excess capacity may not be usable capacity from an economic standpoint, however. Diversion of exports from Lake or Gulf ports to take advantage of the excess capacity on either coast would involve higher transportation costs for shippers and possibly for buyers. Since a substantial portion of sales undoubtedly have been contracted at a set price, the sellers necessarily would have to absorb the additional costs. This is unlikely unless any penalties for late delivery exceed the added transportation

Table 8.--Wheat, Feed Grains, Soybeans: Optimum intrastate, interstate, and export shipments, by region, United States, fiscal year 1973

Supply Region	Wheat			Feed Grains			Soybeans		
	Intra-	Inter-	Export	Intra-	Inter-	Export	Intra-	Inter-	Export
	state	state		state	state		state	state	
	----- Million bushels -----								
N. Eng.....	--	--	--	2.2	--	--	--	--	--
N. Y.....	--	--	5.1	32.6	--	--	.1	--	--
Pa.-N.J.....	10.0	--	--	91.5	6.3	--	--	--	2.3
Ohio.....	30.2	5.1	4.6	164.8	131.5	--	48.8	2.9	29.1
Ind.....	15.7	9.5	12.1	263.9	186.7	45.4	63.5	22.4	28.3
Ill.....	37.3	7.1	4.0	480.0	66.7	463.5	206.0	--	50.6
Mich.....	19.6	--	--	102.5	--	50.0	--	--	14.8
Wis.....	.4	--	.9	181.5	--	35.6	--	2.9	--
Minn.....	.8	3.3	45.5	253.2	223.6	89.5	27.4	--	55.6
Iowa.....	2.1	--	--	787.3	357.5	151.2	103.2	107.2	--
Mo.....	35.2	2.4	9.5	253.1	2.6	4.8	--	--	118.4
N. Dak.....	4.5	62.1	237.9	62.1	140.7	26.2	--	--	--
S. Dak.....	3.4	76.4	2.4	182.1	18.0	102.2	--	--	--
Nebr.....	37.2	46.0	91.0	294.6	405.4	--	2.0	15.7	--
Kans.....	95.8	2.0	296.7	182.3	105.9	78.5	21.4	1.0	--
Va.....	12.2	--	--	100.6	--	--	4.6	--	13.4
N. Car.....	7.2	--	--	117.3	--	--	8.6	--	17.3
S. Car.....	1.5	--	1.3	27.2	--	--	12.2	--	9.2
Ga.....	3.2	--	--	74.9	--	--	9.2	--	--
Fla.....	.2	--	.5	17.0	--	--	33.9	--	6.0
Ky.....	3.4	--	3.6	93.5	--	--	1.0	3.7	23.6
Tenn.....	8.5	--	--	32.3	--	--	21.3	--	--
Ala.....	2.0	--	--	24.8	--	--	22.4	8.6	4.4
Miss.....	.2	--	5.1	9.7	--	--	--	--	28.1
Ark.....	.4	--	10.7	14.4	--	--	--	--	58.0
La.....	2/	--	.7	6.6	--	--	4.6	--	36.5
Okla.....	14.1	--	87.9	42.8	1.4	--	--	--	3.2
Tex. N.....	47.0	--	7.9	190.1	6.1	43.3	--	--	.4
Tex. S.....	4.2	--	8.4	106.2	--	52.9	--	--	--
Mont.....	10.6	3.3	78.6	43.4	22.0	--	--	--	--
Idaho.....	6.7	42.2	--	34.4	5.3	--	--	--	--
Wyo.....	.2	4.2	6.5	7.8	4.5	--	--	--	--
Colo.....	25.9	10.3	38.4	45.5	14.3	--	--	--	--
N. Mex.....	.9	1.8	3.3	22.6	--	--	--	--	--
Ariz.....	5.4	--	6.0	19.0	--	--	--	--	--
Utah.....	5.5	--	--	7.2	--	--	--	--	--
Nev.....	.4	--	.3	1.0	--	--	--	--	--
Wash.....	19.6	5.2	109.2	22.0	--	--	--	--	--
Oreg.....	--	--	40.2	16.9	--	--	--	--	--
Calif.....	8.0	--	8.7	95.6	--	1.1	--	--	--
Totals 1/	479.7	280.8	1,127.0	4,660.4	1,698.5	1,138.0	590.3	164.4	499.0

1/ May not add to total due to individual rounding of data.

2/ Shipments less than 50,000 bushels.

Table 9.--Optimum grain exports by type of grain and port region, FY 1973

Port regions	Hard wheat	Soft wheat	Durum wheat	Soy- beans	Corn	Grain sorghum	Barley	Oats	Total
					1,000 bushels				
Lake ports:									
Superior.....	44,599	--	20,000	55,645	104,756	--	20,000	--	245,000
Chicago.....	485	404	--	--	125,111	--	--	--	126,000
Toledo.....	--	4,596	--	24,355	86,049	--	--	--	115,000
Total.....	45,084	1/5,000	1/20,000	1/80,000	315,916	--	20,000	--	486,000
East ports:									
Philadelphia....	4,000	17,196	7,581	61,726	9,301	--	--	--	99,804
Norfolk.....	--	1,296	2,419	39,809	120,699	--	--	--	164,223
Total.....	1/4,000	18,492	1/10,000	101,535	1/130,000	--	--	--	264,027
Gulf ports:									
New Orleans.....	200,140	30,070	13,000	317,115	457,554	3,588	--	8,533	1,030,000
Houston.....	404,249	--	--	--	83,324	62,061	--	366	550,000
Corpus Christi..	87,093	--	--	350	1,206	51,351	--	--	140,000
Total.....	691,482	30,070	13,000	317,465	542,084	117,000	--	8,899	1,720,000
West ports:									
Los Angeles.....	--	5,971	--	--	--	--	--	--	5,971
San Francisco....	45,025	8,821	--	--	--	3,000	--	1,101	57,947
Portland.....	94,409	133,646	2,000	--	--	--	--	--	230,055
Total.....	139,439	148,438	1/2,000	--	--	1/3,000	--	1,101	293,973
United States.....	880,000	202,000	45,000	499,000	988,000	120,000	20,000	10,000	2,764,000

11/ These volumes do not exceed the minimum coastal requirements specified in the model.

costs. Some variation from the optimal quantity flows is likely but probably not enough to significantly reduce the volumes required or shipped through Lake and Gulf ports. Hence, any significant problems at Lake or Gulf ports during the remainder of the fiscal year could seriously jeopardize the attainment of the model's projected volume of exports.

Implications

This analysis assumed that if a shipment was optimal, transportation equipment would be available to make the move. The achievement of results similar to least-cost computer analysis will

depend upon the ability of the domestic transportation system to move grain to port elevators in a timely manner. Delays would affect production rates at port elevators, and Lake and Gulf ports would be unable to handle the projected shipments. Thus, additional quantities would have to be shipped to East or West Coast ports where additional capacity is available, and this would intensify the demand for transportation equipment because of longer hauls. Because of this consideration, it becomes critically important that shipments to Lake and Gulf elevators be adequate to keep these facilities operating at capacity during the remainder of the shipping season.

Table 10.--The market basket of farm foods by product group: Retail cost, farm value, farm-retail spread, and farmer's share of retail cost, quarterly 1971-72.

Item	1971	1972			
	IV	I	II	III	IV
		Dollars			
		Retail cost			
Market basket	1260.09	1291.36	1297.85	1323.42	1330.63
Meat	384.75	410.54	413.07	431.30	431.22
Dairy	226.90	228.32	229.77	227.92	230.04
Poultry	49.72	50.62	49.99	51.17	50.71
Eggs	37.75	37.26	35.22	37.67	41.87
Bakery and cereal:					
All ingredients	192.12	192.22	193.16	191.87	192.93
Grain	-	-	-	-	-
Fresh fruits	53.71	53.42	57.33	63.76	59.92
Fresh vegetables	84.71	87.77	86.89	88.37	90.59
Proc. fruits and veg. ...	126.92	127.41	128.07	127.83	129.33
Fats and oils	45.61	45.66	45.61	44.87	44.84
Miscellaneous	57.90	58.14	58.74	58.66	59.18
		Farm value			
Market basket	486.17	506.86	510.29	534.15	534.23
Meat	215.61	234.95	239.37	250.93	246.32
Dairy	106.35	108.41	108.59	108.59	109.99
Poultry	21.66	24.52	23.58	25.97	24.72
Eggs	21.36	20.57	18.18	22.14	25.80
Bakery and cereal:					
All ingredients	29.67	29.89	30.28	31.55	36.45
Grain	21.79	22.23	22.56	24.28	29.10
Fresh fruits	16.59	15.41	16.50	20.02	19.23
Fresh vegetables	28.90	27.40	27.34	30.44	27.78
Proc. fruits and veg. ...	22.99	23.55	23.96	23.73	23.96
Fats and oils	14.19	13.28	13.70	12.00	11.02
Miscellaneous	8.85	8.88	8.79	8.78	8.96
		Farm-retail spread			
Market basket	773.92	784.50	787.56	789.27	796.40
Meat	169.14	175.59	173.70	180.37	184.90
Dairy	120.55	119.91	121.18	119.33	120.05
Poultry	28.06	26.10	26.41	25.20	25.99
Eggs	16.39	16.69	17.04	15.53	16.07
Bakery and cereal:					
All ingredients	162.45	162.33	162.88	160.32	156.48
Grain	-	-	-	-	-
Fresh fruits	37.12	38.01	40.83	43.74	40.69
Fresh vegetables	55.81	60.37	59.55	57.93	62.81
Proc. fruits and veg. ...	103.93	103.86	104.11	104.10	105.37
Fats and oils	31.42	32.38	31.91	32.87	33.82
Miscellaneous	49.05	49.26	49.95	49.88	50.22
		Farmer's share			
		Percent			
Market basket	38.6	39.2	39.3	40.4	40.2
Meat	56.0	57.2	58.0	58.2	57.1
Dairy	46.9	47.5	47.3	47.6	47.8
Poultry	43.6	48.4	47.2	50.8	48.8
Eggs	56.6	55.2	51.6	58.8	61.6
Bakery and cereal:					
All ingredients	15.4	15.6	15.7	16.4	18.9
Grain	11.4	11.6	11.8	12.7	15.2
Fresh fruits	30.9	28.8	28.8	31.4	32.1
Fresh vegetables	34.1	31.2	31.5	34.4	30.7
Proc. fruits and veg. ...	18.1	18.5	18.7	18.6	18.5
Fats and oils	31.1	29.1	30.0	26.7	24.6
Miscellaneous	15.3	15.3	15.0	15.0	15.1

Table 11.--Farm food products: Retail price, farm value, farm-retail spread, and farmer's share of retail price, October-December 1972, July-September 1972 and October-December 1971.

Product 1/	Retail unit	Retail price		Farm value				Farm-retail spread				Farmer's share			
		IV : 1972	III : 1972	IV : 1971	IV : 1972	III : 1972	IV : 1971	IV : 1972	III : 1972	IV : 1971	IV : 1972	III : 1972	IV : 1971		
Cents														Percent	
Beef, Choice	Pound	113.2	115.3	106.6	70.1	72.7	69.9	43.1	42.6	36.7	62	63	66		
Lamb, Choice	Pound	122.1	120.5	112.2	61.1	66.1	56.8	61.0	54.4	55.4	50	55	51		
Pork	Pound	87.7	86.1	71.9	51.7	51.6	35.3	36.0	34.5	36.6	59	60	49		
Butter	Pound	87.2	86.6	87.5	59.2	59.9	58.2	28.0	26.7	29.3	68	69	67		
Cheese, American															
process	$\frac{1}{2}$ pound	55.1	54.5	53.2	24.5	24.2	22.8	30.6	30.3	30.4	44	44	43		
Ice cream	$\frac{1}{2}$ gallon	85.7	85.7	85.7	29.6	29.2	28.4	56.1	56.5	57.3	35	34	33		
Milk, evaporated	14 $\frac{1}{2}$ -ounce can	20.2	19.7	20.2	9.4	9.4	9.1	10.8	10.3	11.1	47	48	45		
Milk, fresh:															
Home delivered	$\frac{1}{2}$ gallon	69.5	69.1	67.8	30.5	30.1	29.7	39.0	39.0	38.1	44	44	44		
Sold in stores	$\frac{1}{2}$ gallon	59.8	59.5	59.2	30.5	30.1	29.7	29.3	29.4	29.5	51	51	50		
Chicken, frying	Pound	41.5	42.0	40.5	20.0	21.3	17.3	21.5	20.7	23.2	48	51	43		
Turkey	Pound	55.4	55.0	55.6	29.5	27.6	28.6	25.9	27.4	27.0	53	50	51		
Eggs, large Grade A ..	Dozen	57.8	52.1	52.0	35.6	30.5	29.4	22.2	21.6	22.6	62	59	57		
Bread, white:															
All ingredients	Pound	24.7	24.7	24.5	4.4	3.8	3.5	20.3	20.9	21.0	18	15	14		
Wheat	Pound	-	-	-	3.4	2.9	2.6	-	-	-	14	12	11		
Bread, whole wheat ..	Pound	39.9	39.7	39.4	3.9	3.3	3.1	36.0	36.4	36.3	10	8	8		
Cookies, sandwich	Pound	55.3	55.1	54.8	6.4	6.2	6.6	48.9	48.9	48.2	12	11	12		
Corn flakes	12 ounces	30.8	31.0	32.2	2.2	2.1	1.8	28.6	28.9	30.4	7	7	6		
Flour, white	5 pounds	60.3	58.9	59.9	27.3	22.7	20.4	33.0	36.2	39.5	45	39	34		
Rice, long grain	Pound	24.0	23.9	24.0	10.6	8.2	7.7	13.4	15.7	16.3	44	34	32		
Apples	Pound	23.2	28.4	20.5	8.3	8.7	7.0	14.9	19.7	13.5	36	31	34		
Grapefruit	Each	20.4	23.1	18.1	4.8	6.7	4.4	15.6	16.4	13.7	24	29	24		
Lemons	Pound	35.3	34.5	33.4	10.0	10.2	9.7	25.3	24.3	23.7	28	30	29		
Oranges	Dozen	96.0	99.1	99.8	20.3	24.4	24.0	75.7	74.7	75.8	21	25	24		
Cabbage	Pound	13.8	13.4	13.8	4.3	4.6	3.8	9.5	8.8	10.0	31	34	28		
Carrots	Pound	22.1	19.8	19.7	7.9	6.0	6.5	14.2	13.8	13.2	36	30	33		
Celery	Pound	22.1	21.7	22.0	6.2	7.6	5.8	15.9	14.1	16.2	28	35	26		
Cucumbers	Pound	23.8	26.4	25.7	6.6	9.8	8.4	17.2	16.6	17.3	28	37	33		
Lettuce	Head	37.7	31.4	40.5	12.7	10.4	14.5	25.0	21.0	26.0	34	33	36		
Onions	Pound	19.4	21.1	14.6	6.8	8.6	4.4	12.6	12.5	10.2	35	41	30		
Peppers, green	Pound	42.6	47.1	45.0	13.6	14.5	14.9	29.0	32.6	30.1	32	31	33		
Potatoes	10 pounds	97.7	103.6	81.5	24.7	33.4	18.5	73.0	70.2	63.0	25	32	23		
Tomatoes	Pound	48.4	42.5	46.7	17.5	7.4	18.6	30.9	25.1	28.1	36	41	40		

Continued--

Table 11.--Farm food products: Retail price, farm value, farm-retail spread, and farmer's share of retail price, October-December 1972, July-September 1972, October-December 1971 -- Continued

Products	Retail price		Farm value		Farm-retail spread		Farmer's share	
	IV : 1972	III : 1972	IV : 1971	III : 1972	IV : 1972	III : 1972	IV : 1971	III : 1972
	Cents							
Peaches, canned.....	No. 2½ can : 37.9	37.5	37.3	7.3	7.3	30.6	30.2	30.0
Pears, canned.....	No. 2½ can : 54.4	53.5	53.0	8.5	8.5	45.9	45.0	44.5
Beets, canned.....	No. 303 can : 21.3	20.8	19.9	1.3	1.3	20.0	19.5	18.6
Corn, canned.....	No. 303 can : 24.5	24.5	24.7	2.8	2.7	21.7	21.8	22.0
Peas, canned.....	No. 303 can : 26.3	26.4	26.5	4.0	3.9	22.3	22.4	22.6
Tomatoes, canned.....	No. 303 can : 23.3	22.9	22.5	2.8	2.7	20.5	20.1	19.8
Lemonade, frozen.....	6-ounce can : 14.6	14.2	14.2	3.5	3.4	11.1	10.8	10.6
Orange juice, frozen..	6-ounce can : 24.9	25.0	24.9	10.6	8.0	14.3	14.4	16.9
Potatoes, french fried, frozen.....	9 ounces : 16.7	16.7	16.4	2.6	2.2	14.1	14.5	13.9
Peas, frozen.....	10 ounces : 22.8	22.4	22.2	3.6	3.6	19.2	18.8	18.6
Beans, dried.....	Pound : 25.4	24.9	23.8	9.2	10.2	16.2	14.7	12.2
Margarine.....	Pound : 32.9	33.0	33.2	7.8	9.0	25.1	24.0	22.7
Peanut butter.....	12-ounce jar : 50.6	50.4	50.1	17.6	16.8	33.0	33.6	33.4
Salad and cooking oil.....	24-oz. bottle : 63.5	63.6	65.5	11.7	13.1	51.8	50.5	49.3
Vegetable shortening..	3 pounds : 96.1	96.6	98.7	26.4	30.7	69.7	65.9	62.2
Sugar.....	5 pounds : 70.1	69.3	68.7	29.5	29.6	40.6	39.8	39.1
Spaghetti, canned.....	15½-oz. can : 19.8	19.6	19.1	2.3	2.0	17.5	17.4	17.1

1/ Primary products in the farm-food market basket.

2/ Preliminary.

Table 12.--Farm food products: Retail price, farm value, byproduct allowance, farm-retail spread, and farmer's share of retail price, fourth quarter 1972

Product	Farm equivalent	Retail unit	Retail price	Gross farm value	Byproduct allowance	Net farm value	Farm-retail spread	Farmer's share
Beef, Choice grade	2.28 lb. Choice cattle	Pound	113.2	79.0	8.9	70.1	43.1	62
Lamb, Choice grade	2.47 lb. lamb	Pound	122.1	69.4	8.3	61.1	61.0	50
Pork	1.97 lb. hog	Pound	87.7	55.4	3.7	51.7	36.0	59
Butter	Milk for butter	Pound	87.2	116.0	56.8	59.2	28.0	68
Cheese, American proc.	Milk for American cheese	½ pound	55.1	25.3	.8	24.5	30.6	44
Ice cream	Cream, milk, and sugar	½ gallon	85.7			29.6	56.1	35
Milk, evaporated	Milk for evaporating	14½-ounce can	20.2	9.6	.2	9.4	10.8	47
Milk, fresh:								
Home delivered	4.39 lb. Class I milk	½ gallon	69.5	---	---	30.5	39.0	44
Sold in stores	4.39 lb. Class I milk	½ gallon	59.8	---	---	30.5	29.3	51
Chicken, frying	1.41 lb. broiler	Pound	41.5	---	---	20.0	21.5	48
Turkey	1.28 lb. turkey	Pound	55.4	---	---	29.5	25.9	53
Eggs, Grade A Large	1.03 dozen	Dozen	57.8	---	---	35.6	22.2	62
Bread, white:								
All ingredients	U.S. farm ingredients 2/	Pound	24.7	---	---	4.4	20.3	18
Wheat	.867 lb. wheat 2/	Pound	---	4.0	.6	3.4	---	14
Bread, whole wheat	.708 lb. wheat 2/	Pound	39.9	---	---	3.9	36.0	10
Cookies, sandwich	.528 lb. wheat 2/	Pound	55.3	---	---	6.4	48.9	12
Corn flakes	2.87 lb. yellow corn 3/	12 ounces	30.8	6.7	4.5	2.2	28.6	7
Flour, white	6.85 lb. wheat 2/	5 pounds	60.3	32.3	5.0	27.3	33.0	45
Rice, long grain	1.59 lb. rough rice	Pound	24.0	11.7	1.1	10.6	13.4	44
Apples	1.04 lb. apples	Pound	23.2	---	---	8.3	14.9	36
Grapefruit	1.03 grapefruit	Each	20.4	---	---	4.8	15.6	24
Lemons	1.04 lb. lemons	Pound	35.3	---	---	10.0	25.3	28
Oranges	1.03 dozen oranges	Dozen	96.0	---	---	20.3	75.7	21
Cabbage	1.08 lb. cabbage	Pound	13.8	---	---	4.3	9.5	31
Carrots	1.03 lb. carrots	Pound	22.1	---	---	7.9	14.2	36
Celery	1.08 lb. celery	Pound	22.1	---	---	6.2	15.9	28
Cucumbers	1.09 lb. cucumbers	Pound	23.8	---	---	6.6	17.2	28
Lettuce	1.88 lb. lettuce	Head	37.7	---	---	12.7	25.0	34
Onions	1.06 lb. onions	Pound	19.4	---	---	6.8	12.6	35
Peppers, green	1.09 lb. peppers	Pound	42.6	---	---	13.6	29.0	32
Potatoes	10.42 lb. potatoes	10 pounds	97.7	---	---	24.7	73.0	25
Tomatoes	1.18 lb. tomatoes	Pound	48.4	---	---	17.5	30.9	36

Continued--

Table 12.--Farm food products: Retail price, farm value, byproduct allowance, farm-retail spread, and farmer's share of retail price, fourth quarter 1972--Continued

Product	Farm equivalent	Retail unit	Retail price	Gross farm value	Byproduct allowance	Net farm value	Farm-retail spread	Farmer's share
-----Cents-----								
Percent								
Peaches, canned	1.52 lb. Calif. cling	No. 2½ can	37.9	---	---	7.3	30.6	19
Pears, canned	1.81 lb. pears for canning	No. 2½ can	54.4	---	---	8.5	45.9	16
Beets, canned	1.19 lb. beets for canning	No. 303 can	21.3	---	---	1.3	20.0	6
Corn, canned	2.25 lb. sweet corn	No. 303 can	24.5	---	---	2.8	21.7	11
Peas, canned	.725 lb. peas for canning	No. 303 can	26.3	---	---	4.0	22.3	15
Tomatoes, canned	1.515 lb. tomatoes for canning	No. 303 can	23.3	---	---	2.8	20.5	12
Lemonade, frozen	.834 lb. lemons for processing	6-ounce can	14.6	---	---	3.5	11.1	24
Orange juice, frozen	3.28 lb. oranges	6-ounce can	24.9	---	---	10.6	14.3	43
Potatoes, french fried, frozen	1.41 lb. potatoes	9 ounces	16.7	---	---	2.6	14.1	16
Peas, frozen	.68 lb. peas for canning	10 ounces	22.8	---	---	3.6	19.2	16
Beans, dried	1.04 lb. dry beans	Pound	25.4	---	---	9.2	16.2	36
Margarine	Soybeans, cottonseed, and milk	Pound	32.9	27.8	20.0	7.8	25.1	24
Peanut butter	1.21 lb. peanuts	12-ounce jar	50.6			17.6	33.0	35
Salad and cooking oil	Soybeans, cottonseed, and corn	24-oz. bottle	63.5	41.1	29.4	11.7	51.8	18
Vegetable shortening	Soybeans and cottonseed	3 pounds	96.1	97.1	70.7	26.4	69.7	27
Sugar	Sugar beets and cane	5 pounds	70.1	31.4	1.9	29.5	40.6	42
Spaghetti, canned	Wheat, tomatoes, cheese, and sugar	15¼-ounce can	19.8	---	---	2.3	17.5	12

- 1/ Payment to farmers for equivalent quantities of farm products (gross farm value) minus imputed value of byproducts obtained in processing.
- 2/ Farm values for wheat products are based on market price of wheat received by farmers plus cost of the marketing certificate to millers. This cost is returned to farmers complying with the Wheat Program.
- 3/ Farm value based on market price of corn received by farmers; no allowance made for price support payment received by farmers who comply with the Federal Feed Grain Program.
- 4/ Net farm value including Government payments to producers was 33.3 cents with a farmer's share of 48 percent. Farm-retail spread less Government processor tax was 37.9 cents.

Table 13.--Farm food products: Retail price, farm value, farm-retail spread, and farmer's share of retail price, 1970, 1971 and 1972.

Product 1/	Retail unit	Retail price			Farm value			Farm-retail spread			Farmer's share			
		1970	1971	1972 2/	1970	1971	1972 2/	1970	1971	1972 2/	1970	1971	1972 2/	
Cents														
Beef, Choice	Pound	98.6	104.3	113.8	61.5	67.9	72.5	37.1	36.4	33.8	62	65	64	
Lamb, Choice	Pound	105.5	109.9	118.3	58.7	57.2	63.0	46.8	52.7	55.3	56	52	53	
Pork	Pound	78.0	70.3	83.2	39.5	32.3	47.9	38.5	38.0	35.3	51	46	54	
Butter	Pound	86.6	87.6	87.1	61.9	59.5	59.2	24.7	28.1	27.9	71	68	68	
Cheese, American process	1/2 pound	50.4	52.8	54.3	22.2	22.9	24.1	28.2	29.9	30.2	44	43	44	
Ice cream	1/2 gallon	84.5	85.4	85.8	28.5	28.5	29.2	56.0	56.9	56.6	34	38	34	
Milk, evaporated	14 1/2-ounce can	18.7	19.8	20.0	8.8	9.1	9.4	9.9	10.7	10.6	47	46	47	
Milk, fresh:														
Home delivered	1/2 gallon	65.9	67.6	69.0	28.8	29.6	30.2	37.1	38.0	38.8	44	44	44	
Sold in stores	1/2 gallon	57.4	58.9	59.8	28.8	29.6	30.2	28.6	29.3	29.6	50	50	51	
Chicken, frying	Pound	40.6	41.0	41.4	18.5	19.3	20.1	22.1	21.7	21.3	46	47	49	
Turkey	Pound	56.1	54.8	55.3	30.2	28.0	28.4	25.9	26.8	26.9	54	51	51	
Eggs, large Grade A ..	Dozen	61.2	52.8	52.4	38.3	30.2	29.9	22.9	22.6	22.5	63	57	57	
Bread, white:														
All ingredients	Pound	24.2	24.8	24.7	3.4	3.5	3.8	20.8	21.3	20.9	14	14	15	
Wheat	Pound	-	-	-	2.6	2.6	3.0	-	-	-	11	10	12	
Bread, whole wheat ..	Pound	37.1	38.8	39.6	3.0	3.1	3.6	34.1	35.7	36.0	8	8	9	
Cookies, sandwich	Pound	52.0	54.5	55.2	5.9	6.6	6.4	46.1	47.9	48.8	11	12	12	
Corn flakes	12 ounces	32.2	33.4	31.2	2.2	2.2	2.0	30.0	31.2	29.2	7	7	6	
Flour, white	5 pounds	58.8	59.9	59.6	20.6	20.9	22.9	38.2	39.0	36.7	35	35	38	
Rice, long grain	Pound	23.1	23.8	24.0	7.3	7.7	8.7	15.8	16.1	15.3	31	32	36	
Apples	Pound	21.8	23.3	24.6	6.0	7.0	8.0	15.8	16.3	16.6	28	30	33	
Grapefruit	Each	17.0	18.4	19.4	4.0	4.7	5.0	13.0	13.7	14.4	24	26	26	
Lemons	Pound	31.2	32.9	34.7	8.9	9.7	10.0	22.3	23.2	24.7	29	30	29	
Oranges	Dozen	85.9	94.1	94.2	20.3	23.0	21.1	65.6	71.2	73.1	24	24	22	
Cabbage	Pound	14.6	13.4	14.2	4.6	4.1	4.3	10.0	9.3	9.9	32	31	30	
Carrots	Pound	17.6	20.6	21.5	5.3	7.3	7.4	12.3	13.3	14.1	30	35	34	
Celery	Pound	20.2	19.4	23.6	6.1	5.2	7.2	14.1	14.2	16.4	30	27	31	
Cucumbers	Pound	27.5	28.4	28.9	10.1	10.6	11.2	17.4	17.8	17.7	37	37	39	
Lettuce	Head	29.8	34.0	34.1	9.4	11.6	11.5	20.4	22.4	22.6	32	34	34	
Onions	Pound	16.1	14.3	17.7	5.2	4.2	6.3	10.9	10.1	11.4	32	30	36	
Peppers, green	Pound	51.7	52.8	50.6	20.8	21.8	18.9	30.9	31.0	31.7	40	41	37	
Potatoes	10 pounds	89.0	85.9	92.6	25.7	21.3	24.6	63.3	64.6	68.0	29	25	27	
Tomatoes	Pound	41.9	46.5	46.8	15.0	18.8	16.7	26.9	27.7	30.1	36	40	36	

Continued--

Table 13--Farm food products: Retail price, farm value, farm-retail spread, and farmer's share of retail price, 1970, 1971, and 1972

Products	1/ Retail unit	Retail price			Farm value			Farm-retail spread			Farmer's share		
		1970	1971	1972 2/	1970	1971	1972 2/	1970	1971	1972 2/	1970	1971	1972 2/
		Cents											
		Percent											
Peaches, canned	No. 2½ can	35.2	36.9	37.5	7.0	7.4	7.3	28.2	29.5	30.2	20	20	19
Pears, canned	No. 2½ can	49.5	52.9	53.5	11.4	11.4	8.5	38.1	41.5	45.0	23	22	16
Beets, canned	No. 303 can	18.6	19.5	20.7	1.3	1.3	1.3	17.3	18.2	20.4	7	7	6
Corn, canned	No. 303 can	24.4	24.8	24.6	2.7	2.6	2.7	21.7	22.2	21.9	11	10	11
Peas, canned	No. 303 can	25.1	26.2	26.4	3.9	3.9	4.0	21.2	22.3	22.4	16	15	15
Tomatoes, canned	No. 303 can	21.3	22.6	22.8	2.6	2.6	2.7	18.7	20.0	20.1	12	12	12
Lemonade, frozen	6-ounce can	13.2	13.9	14.4	3.3	3.3	3.4	9.9	10.6	11.0	25	24	24
Orange juice, frozen	6-ounce can	22.5	23.4	25.0	7.8	7.3	10.3	14.7	16.1	4.7	35	31	41
Potatoes, french fried, frozen	9 ounces	16.5	16.3	16.6	2.9	2.6	2.3	13.6	13.7	14.3	18	16	14
Peas, frozen	10 ounces	21.2	22.1	22.5	3.6	3.7	3.6	17.6	18.4	18.9	17	17	16
Beans, dried	Pound	19.2	22.3	24.8	7.5	11.4	10.7	11.7	10.9	14.1	39	51	43
Margarine	Pound	29.8	32.7	33.1	8.9	10.4	9.1	20.9	22.3	24.0	30	32	27
Peanut butter	12-ounce jar	47.7	49.5	50.5	14.9	15.4	17.0	32.8	34.1	33.5	31	31	34
Salad and cooking oil	24-oz. bottle	56.8	63.5	64.4	14.0	16.5	13.8	42.8	47.0	50.6	25	26	21
Vegetable shortening	3 pounds	88.8	96.9	97.3	31.1	37.0	31.2	57.7	59.9	66.1	35	38	32
Sugar	5 pounds	65.0	68.1	69.5	26.7	29.7	29.5	38.3	38.4	40.0	41	44	42
Spaghetti, canned	15½-oz. can	18.5	19.1	19.4	2.1	2.2	2.2	16.4	17.1	17.2	11	10	11

1/ Primary products in the farm-food market basket.

2/ Preliminary.

Table 14.--The market basket of farm foods by product group: Retail cost, farm value, farm-retail spread, and farmer's share of retail cost, annually 1968-1972. ^{1/}

Item	1968	1969	1970	1971	1972 ^{2/}
<u>Dollars</u>					
<u>Retail cost</u>					
Market basket	1119.62	1178.98	1228.43	1250.47	1310.82
Meat	328.89	364.11	381.22	377.38	421.53
Dairy	201.97	208.53	218.84	225.49	229.01
Poultry	47.82	50.73	49.76	50.13	50.62
Eggs	38.13	44.83	44.31	38.27	38.01
Bakery and cereal:					
All ingredients	171.65	176.11	185.61	192.67	192.54
Grain	-	-	-	-	-
Fresh fruits	54.44	51.62	51.52	55.68	58.61
Fresh vegetables	72.57	76.16	81.42	83.46	88.40
Proc. fruits and veg. ...	115.55	116.32	119.24	125.24	128.16
Fats and oils	37.91	37.96	40.84	44.68	45.24
Miscellaneous	50.68	52.61	55.68	57.52	58.68
<u>Farm value</u>					
Market basket	441.42	481.24	477.99	479.50	521.37
Meat	187.48	214.84	210.18	207.12	242.89
Dairy	95.14	100.06	104.21	106.36	108.90
Poultry	24.26	25.89	23.14	23.79	24.70
Eggs	23.42	29.86	27.75	21.89	21.66
Bakery and cereal:					
All ingredients	27.71	27.75	29.51	30.26	32.04
Grain	21.85	21.33	22.10	22.41	24.52
Fresh fruits	18.91	15.91	14.45	16.68	17.79
Fresh vegetables	23.87	24.81	25.83	27.32	28.24
Proc. fruits and veg. ...	22.99	23.93	22.31	23.04	23.80
Fats and oils	9.78	10.00	12.17	14.07	12.50
Miscellaneous	7.85	8.19	8.45	8.97	8.85
<u>Farm-retail spread</u>					
Market basket	678.20	697.74	750.44	770.97	789.45
Meat	141.41	149.27	171.04	170.26	178.64
Dairy	106.83	108.47	114.63	119.13	120.11
Poultry	23.56	24.84	26.62	26.34	25.92
Eggs	14.71	14.97	16.56	16.38	16.34
Bakery and cereal:					
All ingredients	143.94	148.36	156.10	162.41	160.50
Grain	-	-	-	-	-
Fresh fruits	35.53	35.71	37.07	39.00	40.82
Fresh vegetables	48.70	51.35	55.59	56.14	60.16
Proc. fruits and veg. ...	92.56	92.39	96.93	102.20	104.36
Fats and oils	28.13	27.96	28.67	30.61	32.74
Miscellaneous	42.83	44.42	47.23	48.55	49.83
<u>Farmer's share</u>					
<u>Percent</u>					
Market basket	39.4	40.8	38.9	38.4	39.8
Meat	57.0	59.0	55.1	54.9	57.6
Dairy	47.1	48.0	47.6	47.2	47.6
Poultry	50.7	51.0	46.5	47.5	48.8
Eggs	61.4	66.6	62.6	57.2	57.0
Bakery and cereal:					
All ingredients	16.1	15.8	15.9	15.7	16.6
Grain	12.7	12.1	11.9	11.6	12.7
Fresh fruits	34.7	30.8	28.0	30.0	30.4
Fresh vegetables	32.9	32.6	31.7	32.7	32.0
Proc. fruits and veg. ...	19.9	20.6	18.7	18.4	18.6
Fats and oils	25.8	26.3	29.8	31.5	27.6
Miscellaneous	15.5	15.6	15.2	15.6	15.1

^{1/} Market basket and product group totals for 1968-72 have been revised.

^{2/} Preliminary.

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